Trees.

A Spreading Upright Ginkgo—The Perfect Tree At Last

A Merry Christmas and a Peaceful New Year to All

The Mechanics of Mist Spraying — *George E. Tirrell*

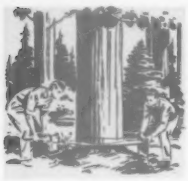
Connecticut Courts and Trees — *Edward A. Connell*

November-December, 1948 *The Journal of American Arboriculture* Vol. 9—No. 1

Easy Handling and Fast Cutting

ARE FEATURES OF NEW McCULLOCH CHAIN SAW

CLOSE FELLING saves dynamiting or bulldozing, and conserves wood. The McCulloch blade swivels 360°, permits cutting almost to the ground level.



LIMBING IS EASY AND SAFE. The light weight and automatic clutch permit safe handling up in the tree. The special McCulloch engine operates in any position. The Rip-Cross chain slices through knots, burls, roots, etc.

RIPS ANY WOOD. The direction of the grain or the type of tree is immaterial with a McCulloch. It cuts straight, clean, and fast in *any* direction.

BUCKS RAPIDLY and is so light that underbucking is convenient. The outboard handle detaches instantly, enabling the blade to be pulled through a cut when necessary.

A trial run with a McCulloch chain saw is a satisfying experience no forester or tree surgeon should miss. It's amazingly light (the entire power unit with transmission weighs only 38 pounds) yet it has so much *reserve* power that the average-weight man *can't stall it in a cut.*

The McCulloch has the exclusive Rip-Cross chain, which cuts rapidly in *any* kind of wood. The Rip-Cross chain *never* needs setting, and is easily sharpened by *hand* filing *without* removal from the blade.

The McCulloch has many more special features of real interest to you. Send for detailed data on this modern wood-cutting wizard.

20-inch Chain Saw...$385.00

36-inch Chain Saw...$395.00

48-inch Chain Saw...$410.00

60-inch Chain Saw...$425.00

20-inch Bow Saw...$425.00

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McCULLOCH McC CHAIN SAWS

★ WEIGHS ONLY 45 LBS. COMPLETE WITH 20" BLADE AND CHAIN

★ 5 HONEST HORSEPOWER FOR TIMBER TO 5 FT. IN DIAMETER

McCULLOCH MOTORS CORPORATION
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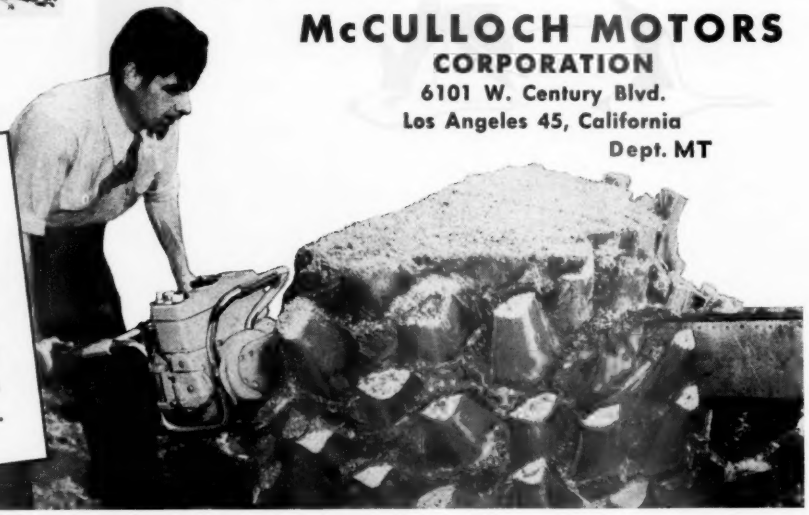
Los Angeles 45, California
Dept. MT

HERE IS AN ACID TEST!

Palm is a miserable, frustrating wood for a chain saw to encounter. The McCulloch, with its exclusive all-purpose Rip-Cross chain, will not only cross-cut palm but will even rip it rapidly, as shown here.



TREES Magazine is a bi-monthly Journal published at Cleveland, Ohio, by Edward H. Scanlon, and is devoted to the furtherance of the technical and business administration of Trees (Street and Ornamental); Parks (Municipal and National); and Forests (State, National and Private), in the U. S. Scanlon Publishing Co., P. O. Box 5607, Cleveland, Ohio Subscription by mail $2 per year; outside United States. $2.50. Advertising rates upon inquiry. Closing date for advertising copy—10th of month preceding date of issue. Unsolicited manuscripts must be accompanied by return postage.

ALONG THE WAY With . . . EDW. SCANLON

■ I always thought RING LARDNER was KIDDING when HE REFERRED to the fall BASEBALL CLASSIC as the "WORLD SERIOUS." He WASN'T. If you think it WASN'T SERIOUS getting TICKETS then you KNOW WHAT I MEAN.

■ *Well, I FINALLY MANAGED to get ducats to ALL THREE of the SERIES GAMES played here. QUITE A SPECTACLE—never having seen a WORLD SERIES before. And we LICKED BOSTON—BOSTONEERS please note.*

■ What a GORGEOUS FALL this was. The COLOR WAS RAMPANT. White oaks even COLORED RED—the elms were a TOASTED BROWN, but for some REASON OR OTHER I didn't see a REALLY GOOD SPECIMEN of the NORMAL KING of all FALL COLOR showoffs, the SWEET GUM.

■ *CHARLIE IRISH has been having a REALLY TOUGH TIME following a NORMALLY MINOR OPERATION that he UNDERWENT in October. I KNOW that a FLOCK OF GOOD CHEER LETTERS from YOU FOLKS in the FAR FLUNG corners of the YOUESS would do the PAST PREZ a LOT OF GOOD. DON'T let him DOWN.*

■ You've READ A LOT about the "MAIRZIE DOATS" MATTRESS, and the fact that you SPEND AT LEAST a THIRD of your LIFE IN BED—well, now, IF YOU want that PROPORTION TWO-THIRDS, get yourself an ELECTRIC BLANKET. They are just the PLAIN UNADULTERATED NUTS. They SURE TAKE the ACHE out of TIRED BONES.

■ *NEAL LIMING of the USDA, DED lab, came out TO CLEVELAND to our ARBORIST AND PARK MEETING on DED in OCTOBER, and the BARON AND BARONESS of MORTGAGE MANOR had him out for a LITTLE CHOW AND SHUT-EYE. Just as he WAS WALKING UP to the porch a LOUD VOICE sang out, "YOU CAN'T BRING THAT THING IN HERE." We explained, hastily, that it was THE LADY NEXT DOOR trying to DISCOURAGE HER YOUNG SON from adopting a STRAY POOCH. Hope HE BELIEVES that STORY.*

■ HOW MANY would VOTE FOR THIS IDEA? Wouldn't it BE GOOD for the LOCAL ARRANGEMENTS COMMITTEE of the NATIONAL SHADE TREE CONFERENCE to compile a list of the FAMOUS, BEAUTIFUL, LARGE OR UNUSUAL TREES in and around the CONVENTION CITY. This would GIVE ALL INTERESTED persons an opportunity to INDULGE IN THEIR FAVORITE avocation. I VOTE FOR IT—and start out THE LIST with a NOMINEE THAT I have been WANTING TO SEE ever since HANK HOHMAN (KINGSVILLE NURSERY, MARYLAND) first told me about it SEVERAL YEARS AGO. The tree, OUTSIDE OF BALTIMORE, is a WEEPING SOPHORA (Sophora Japonica pendula) located in WHITEMARSH, MARYLAND. It was PLANTED by the GREAT-GRANDFATHER of the LADY WHO OWNS it. It must be a MAGNIFICENT SPECIMEN. Let's have SOME THOUGHTS and MORE TREES for the list.

■ *The PROCEEDINGS of the 22ND ANNUAL MEETING (Dec. 3-4, 1948) of the NEW JERSEY FEDERATION OF SHADE TREE COMMISSIONS is at hand. It contains 13 titles of some VERY INTERESTING and USABLE MATERIAL.*

■ BILL CARROLL, Supt. of Parks, SACRAMENTO, sent in some EXCELLENT PICTURES of a street of ZELKOVA SERRATA. The trees are PLANTED ON THE LAWN, with the SIDEWALK AT THE CURB. A very smart and NEAT ARRANGEMENT. We'll show it to you COME ANOTHER ISSUE. Thanks, BILL, and hope you DON'T FORGET the seed—TRIDENT MAPLE and ZELKOVA?

■ *A very WELCOME VISITOR several weeks ago was BILL MOTT JR., SUPT. OF PARKS, OAKLAND. Bill was especially IMPRESSED with OUR USE of the WHEATLEY ELM (see pic in Arborists Clinic). This is a STREET TREE of EXCELLENT PROPORTIONS for NARROW STREETS.*

■ The U.S.D.A. had HAROLD CRAMER in these parts SEVERAL WEEKS ago taking TWIG SAMPLES to determine THE EFFECTIVENESS of our SCOLYTUS SPRAYING. This is a VALUABLE SERVICE that will SHOW SPRAYERS the WEAKNESS OR STRENGTH of their SOLUTION or APPLICATION TECHNIQUE.

■ *In response TO MY APPEAL for COURT DECISIONS involving trees KARL DRESSEL, the sage of MICHIGAN STATE (quite a football team they have this fall). SENT IN A DANDY. I don't want to use TOO MUCH OF THIS fine material—prefer to KEEP IT FOR JUDGE SIMONEAU to use in his book, "SHADE TREE LAW." This book is NOW IN THE MILL and will be the FIRST TITLE in our new "AMERICAN SHADE TREE SERIES." Does anyone HAVE ACCESS to additional data, SEND IT IN.*

■ Incidentally, THE MATERIAL in this issue compiled by ED CONNELL will give you SOME IDEA of the INTERESTING and VALUABLE DATA that will be contained in SIMONEAU'S "SHADE TREE LAW." Also, we have ALREADY RECEIVED the FIRST ORDER for the BOOK—you might RESERVE YOUR COPY just to make sure you get the FIRST TITLE IN THIS SERIES which will EVENTUALLY CONTAIN BOOKS on "SHADE TREE PATHOLOGY," "SHADE TREE INSECTS," "FUNDAMENTALS OF ARBORICULTURE" and several others.

■ *While WE ARE on the SUBJECT OF BOOKS don't forget that the SECOND EDITION of PAT PIRONE'S (where did he get that GOOD IRISH NAME?) "MAINTENANCE OF SHADE AND ORNAMENTAL TREES" is now ON SALE at SIX BUX FIFTY. This is one of the VERY FEW BOOKS published in the LAST FIFTEEN YEARS that has DIRECT VALUE to the TREE PRESERVATION FIELD.*

■ This is THE YEAR TO HIT HARD in our program TO LEGALIZE the observance of "NATIONAL ARBOR DAY" on the LAST FRIDAY IN APRIL. There are chairmen HEADING COMMITTEES in 17 STATES, and our GOAL MUST BE to set the DATE LEGALLY in at least 20 STATES next year. Ask YOUR REPRESENATIVE to SUPPORT THIS BILL in the STATES INVOLVED. (See story.)

■ *DICK WHITE, Secretary of the AMERICAN ASSOCIATION OF NURSERYMEN, announces a NEW PROGRAM to STIMULATE INTEREST in HORTICULTURE THROUGHOUT THE NATION. The program will be titled "PLANT AMERICA" and WILL APPLY to HOMES, institution grounds, INDUSTRIAL EMBELLISHMENT, STREET TREES, REFORESTATION, etc. AMERICA is badly in NEED OF PLANTING—sadly lacking in it—YOU SHOULD ADOPT this slogan and GIVE IT WIDE PUBLICITY in all of YOUR ADVERTISING and public relations—"PLANT AMERICA."*

■ THE OHIO NURSERYMEN'S ASSOCIATION will hold its ANNUAL MEETING in Columbus, Jan. 20-21, 1949.

■ *Another MEETING OF INTEREST to NEW ENGLAND arborists is the 27th annual meeting of the CONNECTICUT TREE PROTECTIVE ASSOCIATION, Jan. 19, at Hotel Garde in NEW HAVEN. JOHNNY WOODRUFF of Waterbury is the HUSTLING SECRETARY.*

■ JOHNNY SWINGLE OF DENVER is on the COMMERCIAL EXHIBITS COMMITTEE for the ROCKY MOUNTAIN HORTICULTURAL CONFERENCE to be held Feb. 7-8 at the COSMOPOLITAN HOTEL in DENVER. Natcherly he wants SOME EXHIBITORS, so anyone with a YEN for ALTITUDE better give him a buzz at 1025 14TH ST.

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The Editors of TREES invite discussions, comments and all types of literary materials pertaining to trees and tree preservation from any person engaged either in the scientific advancement or commercial development of the field.

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Nov.-Dec., 1948 **Journal of the National Arborist Association** Vol. 9 No. 1

EDWARD H. SCANLON, Editor
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"No place is complete without trees. A home without trees is charmless; a road without trees is shadeless; a park without trees is purposeless; *a country without trees is hopeless*"

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Out on a Limb

"PLANT AMERICA" CAMPAIGN—

Dr. Richard P. White, executive secretary of the American Association of Nurseymen, has just announced that his organization expects to launch a publicity campaign next year using the slogan "Plant America."

This is not only good advice and a commendable undertaking, but of greater importance is the fact that it *will* be an effort carried to the public. Horticulture is very weak and supine in the all-important field of public relations. Things such as public relations do not take care of themselves. It's a big and important job—and needs badly to be done. We are glad to see Dick White kicking off and we are pleased that he has expressed a desire to tie in the "Plant America" campaign with the program started by this magazine eight years ago to establish the "last Friday in April" as National Arbor Day thruout America.

There are some who offer the objection to a uniform arbor day date that it is climatically impossible to plant on the same day thruout the country. We know that. In fact it was one of the first things we learned in this business many years ago. But, it doesn't matter. The important thing is to make people tree and plant conscious.

It seems to us, looking around at our run-down cities, depleted forests, down at the heel parks, and thousands of homes, institutions and buildings that are so badly in need of trees and plants, that if a tree were never planted on Arbor Day and only national publicity obtained, we would be rendering a far greater service than the apathetic lip service that is paid to arbor day as it is now constituted.

We do not want to allow horticulture to die on the vine. We have no Union to front for us, we must do it alone, but we must be aggressive, much more aggressive than we have been to date. It is not unprofessional or undignified to be aggressive. It is much more annoying to be hungry, or sitting on a curb some place with a beautiful head full of plant knowledge and no customers to buy it.

Yes, we need aggressive public relations and we feel that the "Plant America" and "National Arbor Day" campaigns can be the nucleus for a fine beginning. Provided some help is forthcoming from those who make their living out of it, and would probably like to make a better living.

A Merry Christmas and a Happy New Year to All

California Ash Bugs

The most important insect enemies of the native Oregon ash and the commonly planted Arizona ash in California are plant bugs of the genus neoborus and lace bugs of the genus leptoypha, according to an article by Robert U. Usinger, assistant professor of entomology, in a recent bulletin of the agricultural experiment station, University of California, at Berkeley.

Ash trees are grown extensively for shade and ornamental purposes in parks and along highways throughout California. Because of their rapid growth and resistance to drought, they are considered suitable for planting in the central valleys and in southern California, but unfortunately, they are subject to attack by several native insect pests.

The ash plant bug and the ash lace bug may be controlled effectively with almost any contact insecticide such as rotenone, nicotine, or pyrethrum, in a summer strength oil or with DDT, provided control measures are timed to coincide with the leafing out of the trees and with the life histories of the bugs.

The ash plant bug, Neoborus illitus, is about one-quarter of an inch in length, yellowish in color with dark brown spots, and is similar in body form to its close relatives, the well known lygus bugs. The nymphs are oval, yellow to brown, shining bugs with externally developing wing pads. The eggs hatch when the first leaves appear early in March. Nymphal development requires approximately twenty-five days, the insect passing through five nymphal instars. Eggs are laid in the stems of the current year's growth during April and May and remain imbedded in the plant tissue in a relatively undeveloped condition during the summer and fall. They develop more rapidly and swell by absorption of water during the winter. Hatching follows in the spring, and the annual cycle is repeated.

Neoborus pacificus is less abundant on ornamental trees. It resembles illitus, but lacks the brown markings in both the adult and nymphal stages. It undergoes a life cycle similar to illitus except for a second spring generation.

Neoborus injury starts with the feeding of newly emerged nymphs on the opening buds. White areas devoid of chlorophyll, the green color, and black excrement spots are characteristic evidences on large leaves, while the stems and entire current season's growth wilt as the season advances. Finally, entire limbs become defoliated.

After the eggs are laid and the bugs die new leaves are put forth and the tree regains a superficially normal appearance during the summer months.

The eggs may be controlled with a dormant oil spray or one of the dinitro preparations applied in January or early in February. The most effective control is secured with rotenone, pyrethrum or nicotine in a summer strength oil at dilutions of one part insecticide to 800 parts of water, or one part to 1,200 parts or with DDT at a rate of one pound of actual DDT to 100 gallons of water. From twelve to twenty gallons of spray are required, depending upon the size of the tree.

Application should be made in March after the eggs have hatched but before the developing nymphs have reached maturity. At this time, the bugs are most susceptible to the spray and are wingless. Also they have not laid eggs; so control at this time solves the problem for the current season and also for the following year, since there will be no eggs laid to hatch during the following spring.

The ash lace bug, Leptoypha minor, differs from other lace bugs in that it is brown in color and compact in body form but without the lacy lateral lobes. Eggs are laid on the undersides of the leaves beginning late in April after which generations follow one another continuously at monthly intervals until October. The population gradually builds up, attaining injurious numbers in late summer.

The nymphs are flattened, spiny and gregarious, living in colonies on the undersides of leaves. They pass through five stages, leaving their case skins adhering to the leaf surface long after they have left.

Ash lace bugs cause a whitening of the leaves and a black spotting of the undersurfaces due to fecal deposits. As the season progresses, the foliage becomes brown and partial defoliation may occur. The spiny cast skins of the nymphs adhering to the undersurfaces of the leaves are helpful in recognizing ash lace bug injury.

Both nymphs and adults of the lace bug may be controlled with the same contact sprays mentioned for the ash plant bug. Good coverage, especially of the undersurfaces of the leaves, is essential. Control need not be timed to the opening of buds in the spring. Contact insecticides are effective against nymphs and adults at any time during the season, but early applications in May or June will prevent serious injury.

The eggs are not killed by the spray materials mentioned, and two applications at 2-week intervals are necessary for complete control. A dormant spray applied in January or early February as an ovicide for ash plant bug will destroy most of the ash lace bugs which normally hibernate in the crevices of the bark of the trees.

The Cover Picture

This unusual "ODDITREE," a Ginkgo, should satisfy both admirers of fastigiate and umbrageous forms. It is a happy combination of both.

Charlie Gleason, president of Lakeview Cemetery, Cleveland, will be surprised to see this tree on TREES Magazine. It occupies a prominent place in the cemetery near the memorial to the martyred president James A. Garfield. The odd structure is strictly natural. The bottom part bears fruit while the upper does not.

Record Tulip

Members of the Germantown Cricket Club could brag about a new national champ today. The champ, however, is a tree—a record yellow wood with a trunk circumference of 13 feet.

Russell Mathews, grounds keeper, was advised by C. J. Toner, area manager of the Davey Tree Expert Co., 114 Erdenheim Road, that the tree's girth is one foot greater than the present record holding yellow wood, located at Lawrenceville, N. J.

There are two other yellow woods of near record proportion on the Club grounds, one ten feet in circumference and the other 8 feet, according to Mr. Toner. Not record beaters, but impressive for circumference, nevertheless, are a 13 foot, 6 inch cucumber tree, a 10 foot, 8 inch osage orange, a 17 foot, 8 inch sycamore, and an 8 foot silver bell.

The tree expert will advise the American Forestry Association of the new title holder.

Midwest Arborists Meet In Chicago

Although the program is incomplete, the papers and authors scheduled to date, for the 4th annual Midwest Chapter meeting of the National Shade Tree Conference, assure a splendid diversity of timely topics that should make the two-day gathering, Feb. 18 and 19, a notable one.

Headquarters will be the LaSalle Hotel and it might be well to make reservations early. Chairman of the local committee is Noel Wysong, serving with him are Dr. J. C. Carter and Al Carlstrom.

Tentative Program

Instruments for Diagnosing Tree Troubles ..... A. P. Beilmann
Missouri Botanical Garden
Gray Summit, Mo.

Value of Stump-removing Materials ..... C. S. Walters
University of Illinois
Urbana, Ill.

Problems and Methods of Handling Trees in Relation to Power Lines ..... George Blair
Consumer Power Company
Jackson, Mich.

Soils and the Relation of Soil Organisms to Fertility .....
..... L. M. Turk
Michigan State College
East Lansing, Mich.

Minor Elements in Tree Nutrition ..... A. A. Nikitin
College Park, Georgia

2, 4-D and Ammonium Sulfamate in Weed Control ..... John Simler
Cook County Forest Preserve Dist.
River Forest, Ill.

Care of Evergreens, L. C. Chadwick
Dept. of Horticulture
Ohio State University
Columbus, Ohio

For Sale

1-Irish and 1-Sinnock Tree Mover
(Medium Size)

1-C 40 International Winch Truck
(New 30,000-lb. Tulsa Winch)

Henry J. Babcox & Son
15429 Euclid Avenue
East Cleveland 12, Ohio

The Mechanics of Mist Spraying

By George E. Tirrell,
Greenfield Sprayer Co.
Greenfield, Mass.

(Part II)

Into the air stream generated by the mist sprayer must be injected in some manner the spray solution.

Here indeed is an opportunity for the prospective owner to become acquainted with inventive genius.

Devices for injecting liquids into the air stream range from plain holes in metal tubes to rather elaborate super chargers and spinning discs actuated either by direct drive from the engine or motor or by the force of the air stream.

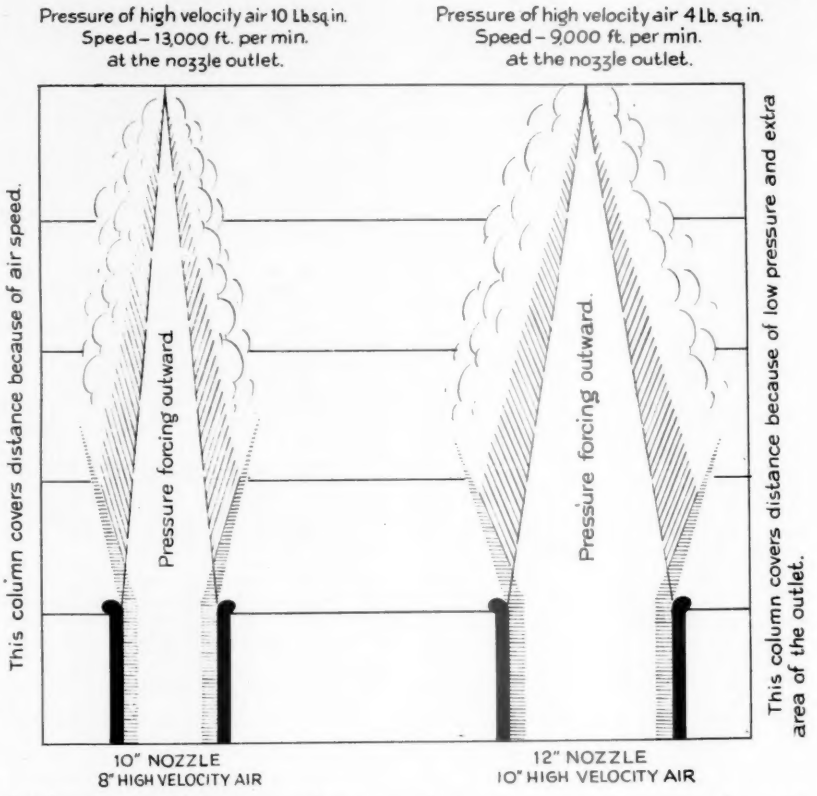
Selection of the proper device for spray injection into the air stream is of the utmost importance. Because of the concentrated nature of most mist spray formula it is necessary that the liquid be broken into the smallest effective droplet size and be transferred by the air stream to the objective without losing its effective quality. The belief that the air stream has a tendency to help break up the liquid into smaller droplet size is not entirely true. Tests have been conducted by injecting spray material into the air stream from the outer circumference of the air nozzle toward the center of the high, velocity area. These tests proved quite conclusively that liquid injected in this manner had a tendency to force the smaller droplets together resulting in unequal droplet size and resulting in a less desirable pattern than where the liquid was injected from the center of the high velocity air in an outwardly direction.

The reason for this condition is that the force of the high velocity air, being compressed, radiates from the center outwardly thus acting to pull apart or separate the droplets.

Liquid being injected into the air stream from the outer circumference encounters this outward moving force. Thus, there being opposed force applied, the droplets are pushed toward each other and joined together.

The results of these tests were derived from air streams ranging from 90 to 150 miles per hour.

The slower the air stream the greater tendency for the droplets to join was shown. Above 150 miles an hour the force of the air stream acted to atomize the liquid. At 200 and 250 miles per hour good atomization of the liquid resulted. Therefore it would seem that for applying oil spray a centrally located injector or an auxiliary air stream of high velocity to break up the oil would be the most desirable. Any increase in


Pressure of high velocity air 10 Lb. sq in.
Speed – 13,000 ft. per min.
at the nozzle outlet.
Pressure of high velocity air 4 Lb. sq in.
Speed – 9,000 ft. per min.
at the nozzle outlet.
This column covers distance because of air speed.
Pressure forcing outward.
Pressure forcing outward.
This column covers distance because of low pressure and extra area of the outlet.
10" NOZZLE
8" HIGH VELOCITY AIR
12" NOZZLE
10" HIGH VELOCITY AIR

droplet size would have a tendency to increase the danger of burning tender foliage. There are several very good ready to use oil sprays available at this time and also available are suggestions for on the job oil formula.

Passing along to the water mixed spray materials we find that the droplet size does not seem to be so all-important as with the oil sprays, chiefly because the danger from burning is less. There are several factors to be considered when selecting devices for injecting water mixed spray materials. The "break up" must be good enough to insure a satisfactory pattern for good coverage.

The construction of the injector or jet must be such that it will not clog freely. This feature is very important where water mixed concentrates are being used due to the consistency of the formula.

Means for metering the spray material through large openings to a "break up" device have proven more satisfactory in many instances than some of the more conventional jets used with hydraulic sprayers where more liquid is used to thin out the spray mixture.

The use of high speed air injection of the spray material has also proven quite satisfactory but care must be exercised that the high speed air of the injector does not dry out the water from the spray material to the extent that dust instead of spray is being delivered to the objective.

After the purchaser of a mist sprayer has selected the proper machine for his type of work, he is immediately confronted by the problem of "how to operate the machine to obtain the best results."

To begin with, each operator should have available a chart telling the amount of spray material necessary per acre for good control. These charts also tell the number of acres that will be sprayed in an hour while traveling at different speeds, which of course regulates the swath width of the delivered spray. For example: While traveling at the rate of two miles per hour the air stream would have a chance to reach away from the sprayer to a greater distance than if the rate of travel was five or more miles per hour.

The reason for this is that for every foot away from the air nozzle the velocity of the air stream decreases. Thus an air stream of 150 miles per hour velocity at the nozzle would be a great deal less at 100 feet from the nozzle, allowing the forward movement of the sprayer to alter the swath width.

These calculations are most important in figuring the average of forest or marsh areas and crop row work.

Next and, in all probability, of more concern to most operators is the spraying of a single tree or rows of trees such as roadside shade trees, park trees, etc.

Such trees are not figured by the acre but as a unit that must receive the proper amount of spray material, and when using oil sprays, no more.

As most applications are figured by the acre it is indeed difficult for the new operator to judge the proper amount of spray to be applied to a unit with a mist sprayer largely because light applications such as two gallons per acre are practically invisible at a distance of 40 feet from the nozzle. Almost all new operators have gotten themselves into "hot water" because they could not convince themselves or their clients that sufficient material was coming in contact with the foliage for effective insect control. Such skepticism has invariably led to the operator dousing the tree until there was visual evidence of the spray material on the foliage. This in turn has led to ugly burning and in some cases to the condemnation of mist spray.

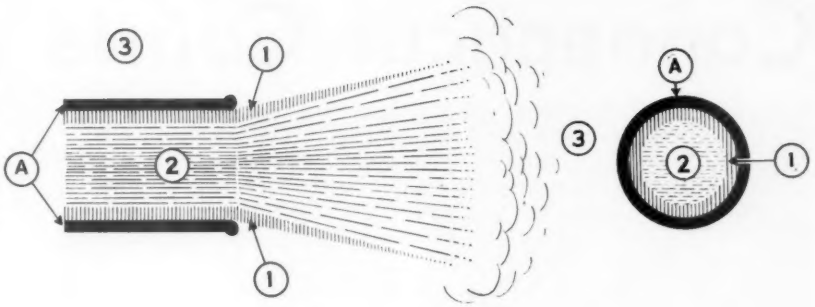
It is definitely the lack of knowledge on the part of the operator that causes such a condition to exist.

It is well for the new operator to know that an acre of forest trees has up to five acres of leaf surface and that as little as two gallons of spray material per ground acre has proven very effective in controlling many kinds of leaf eating insects. It would be hard indeed, with the naked eye, to scan the foliage thus sprayed and locate the droplets that effect this control. Skepticism also prevails with reference to height and distance. The belief of the mist spray novice is that unless the foliage is being agitated briskly about, in the top of a tall tree, no spray is reaching that height.

In truth mist sprays extends beyond the last vestige of agitation. This can be proven by throwing a handful of talcum powder into the air stream.

There is one important exception to be considered at this point. As the air leaves the nozzle it expands outwardly. Thus at 40 feet from a 10" nozzle the area to be filled with spray might be that of an 8-foot circle and at 100 feet be the area of a 40-foot circle, so it will be readily seen that unless sufficient spray material is being metered into the air stream at the nozzle or the droplet size is not small enough to cause the enlarged area to be thoroughly covered, poor control will result at high or distant points.

If the operator attempts to build up the quantity of spray in the air stream by holding the nozzle stationary burning will occur on the lower foliage.



(A) Air Nozzle.

(1) Outer Circumference Air Slowed by skin friction. Approx. ½ speed of high velocity air.

(2) High Velocity Air.

(3) Atmosphere

However if the operator allows the air stream to penetrate the upper reaches of the tree before opening his spray injection valve he will be able to deposit the spray into the upper foliage without damage to the lower leaves. A good method to employ is the "puff" or "short burst" method. This is done by allowing the air time to reach the tree top and then to open and close the spray material shut-off valve several times allowing each burst of spray time to reach the top before the next burst follows. The reason for this method of being advantageous is that the air stream has less weight of material to lift at one time.

If the operator has many long distance objectives to spray, it is well to have the sprayer equipped with a variable metering device whereby the greater amount of spray needed to cover the

A piece of string

The same string

larger, distant area may be injected into the air stream at the operator's will.

This device is also helpful where complete coverage or wetting down with water mixed spray is being used for fungus control. While heavy concentrates are recommended for insect control it is suggested that the concentrates now being tried for fungus control be diluted and more liquid applied to the objective for compelte coverage.

Some mist sprayers now available will discharge up to six gallons or more of spray per minute. These machines have great possibilities for orchard and crop work as well as being very good for bark beetle work. These machines are very flexible from the viewpoint of operation. They employ an air stream of from 80 to 125 miles per hour from a nozzle of sufficient diameter so that at 80 miles per hour there is enough cubic feet of air displacement to retain spray effectiveness.

One important feature of such a machine is that it can be used on growth at close range without defoliating.

Tests have proven that air streams of over 90 miles per hour will defoliate at close range.

Another subject for consideration is wind condition. How does wind affect the efficiency of mist spray? To try and answer this let it first be understood that it is next to impossible to spray against the wind but as practically all mist sprayers today are mounted on a turn base it is possible to make use of the prevailing air movement to supplement the air stream of the sprayer for extra distance and under some conditions extra height.

However it is advisable not to spray in a too heavy wind unless the material being used is of such a nature that the wind drifted spray will not do damage to other plants or animal life for which it was not intended.

There is not as much difference as might be expected between the mist sprayer and the hydraulic sprayer when it comes to spraying in windy weather. It is advisable to spray with a mist machine, whenever possible, either in the early morning or evening and the best time ever is at night, when with the aid of a good spotlight the spray material can be seen for nearly the full distance of travel. Also in the cooler times of the day water mixed spray will travel a greater distance with less evaporation.

However, this is only a suggestion and most mist sprayers are being used during the regulation eight-hour work day.

It must not be too difficult to understand why the mist sprayer operator

(Continued on Page 26)

Connecticut Courts and Trees

By Edward A. Connell
Stamford, Conn.

Connecticut's judicial histories contain many interesting references to shade trees and trees in general. A few of the more indicative cases involving trees and the Connecticut higher courts are these:

Hoyt vs. Southern New England Telephone Company; April, 1891.

The Southern New England Telephone Company, without permission, but supposing it "to have been given," cut a tree in front of a vacant lot owned by Jennie Hoyt of Stamford. The tree, an ornamental shade tree, had been planted by one of the plaintiff's ancestors and had been well cared for in a high-class residential section of the town. The Hoyt's claimed damages of $150, setting that amount as the "increased valuation of the land due to the existence of the elm tree in question."

In the appeal of the defendants, it was claimed that damage to which the Hoyts were entitled was compensation for their actual loss from destruction of the tree and that the award of $150 was "not to be construed as including any sentimental value of the tree but only "its actual value to the lot." It was this statement in the argument of the attorneys for the telephone company that brought the following opinion in the State Supreme Court of Errors and Appeals which has become more or less of a classic argument for the "more than cord wood" value of a tree:

> "Surely the damage would not be in all cases accurately measured by the market value of the wood and timber when cut. The trees might be a highly valuable appendage to the farm for the purpose of shade or ornament; or for other reasons they might have a special value as connected with the farm, altogether independent of and superior to their intrinsic value for purposes of building or fuel. *As well might you remove the columns which supported the roof or some part of the superstructure of a splendid mansion and limit the owner in damages to the value of these columns as timber or cord wood, as to adopt the parallel rule in this case."*

Thus in 1891, the highest court of Connecticut, in the *Hoyt vs. Southern New England Telephone Company case* (60, Conn. 385,390), established definitely that a shade tree was to be valued at more than its weight or volume for firewood or lumber.

Robinson vs. Clapp (65, Conn. 365). This case which was heard in the 3rd Judicial District at Bridgeport in the October Terms of 1894 involved the age-old question — "may the adjacent property owner cut off the extending branches of his neighbor's tree where they extend over the property line?" This case was concerned with the actions of one Clapp who had cut off branches overhanging his property on a tree owned by his neighbor, Robinson. Attorneys Newell & Tuttle for Clapp, stated:

"In this state it is well settled that if the branches injure the land over which they hang or are in any way a nuisance to the adjoining owner, he may lop off everything above his land. Both branches and fruit, however, belong to the owner of the trunk and the adjoining owner must not carry away either. If the trunk of this tree rested wholly on the plaintiff's (Robinson's) land, it is perfectly clear that the defendant (Clapp) might cut off everything which overhung his land and erect his house. Some cases seem to hold that a tree standing on a boundary line, where part of the trunk is on the land of each adjoining owner, belongs to both in common. On examination, this will in all such cases, be found to mean *that neither has a right to the whole tree.* The law of this state differs from that of most in holding that a tenant in common may sever the joint property where it is advisable and take his share of it."

Justice Fenn's opinion in this case was, in part:

"In the first place, trees which stand wholly within the boundary line of one's land belong to him, although their roots and branches may extend into the adjacent owner's land . . . but the adjacent owner may lop off the branches or roots of such trees up to the line of his land. If the tree stands so nearly upon the dividing line between the lands that portions of its body extend into each, the same is the property, in common of the land owners. And neither of them is at liberty to cut the tree without the consent of the other, nor to cut away the part which extends into his land, if he thereby injures the common property in the tree."

Judge Fenn's opinion was strangely reminiscent of the shrewd legal maneuver of Portia in Shakespeare's *Merchant of Venice.* When Shylock advanced, knife in hand, to take his pound of flesh. Portia said:

"Tarry a little; there is something else.
This bond doth give thee no jot of blood;
The words expressly are "a pound of flesh."
Take then thy bond, take thou thy pound of flesh;
But, in the cutting it, if thou dost shed
One drop of Christian blood, thy lands and goods
Are, by the laws of Venice, confiscate
Unto the state of Venice."

Judge Fenn said, in effect, to the defendant Clapp—"it is perfectly all right for you to cut off those parts of your neighbor's tree which overhang your land but if, in the cutting, you injure the tree, you will be liable for damages."

A case similar to the *Robinson vs. Clapp* case came into prominence in Stamford, Connecticut, in 1946, when I was Tree Warden of that community. One Louis Rotas had purchased an extensive building in a very beautiful section of North Stamford. He came to me with his architect's plans and asked that a row of large elm trees averaging about 20" each in diameter, be removed so that he could construct an elaborate cut stone wall with cement coping. I published his request and there was an immediate protest by practically all of the property owners in the vicinity. A public hearing was held during which engineer's testimony proved that the trees in question were on the line separating the Rotas property from Town right of way. At the conclusion of the hearing I gave the ruling that the trees could not be removed. Rotas indicated his intention to take the case higher but his attorney suggested that we try to arrive at some compromise. I finally pointed out that the property line bisected most of the trees and Rotas put in the claim that if this were true then one-half of each tree belonged to him. I agreed to this claim and asked if he were willing for me to make a decision as to "which half" he could take of each tree. He agreed and I thereupon accorded him the legal right to the *bottom half* of each elm with the reservation that in taking his half he must not damage or disturb the Town's half! Rotas had a change of heart, decided to delay any further action, and later on dropped the whole thing with the result that the wall was built a few feet away from the line, the trees are still standing, and all parties were completely satisfied.

Bradley vs. Southern New England Telephone Company (Conn. 66,559).

This case, heard in New Haven in June, 1895, is a most important one where public utility tree trimming is concerned. The action was one to recover damages for the cutting and trimming of six trees owned by Caroline

(Continued on Page 22)

Kill Brush by Winter Spraying

By EUGENE E. PERRIN
The Dow Chemical Company

A new technique and a new chemical are making exciting news in the field of woody vegetation control by chemical spraying.

The technique is winter-time spraying of stumps and small trees. Most of the work during the dormant season has been done with Esteron 44, a product which has been available for several seasons commercially. The new chemical that figures in the brush control picture is 2, 4, 5-trichlorophenoxyacetic acid which experimenters have found capable of killing several species resistant to Esteron 44 or any other 2, 4-D formulation. 2, 4, 5-T will be offered commercially in limited quantities in 1949 as an ester formulation (Esteron 245).

Year-Around Stump Control

During the past three winters, Keith Barrons and L. L. Coulter, agronomists for The Dow Chemical Company, made successful treatments with Esteron 44 in fuel oil, even when temperatures were close to zero. Results from such dormant applications were astonishing. After three years of experimental work, these men believe that any species susceptible to 2, 4-D may be controlled as well by spraying when dormant as by summer spraying.*

This knowledge promises to add greatly to the versatility of 2, 4-D for vegetation control. For example, dormant spraying is of value to farmers who are busy in other seasons, highway engineers who are otherwise unable to spray near sensitive crops, railroad maintenance supervisors who may have extra section hands available when winter slows down other operations, foresters who wish to treat stumps in fire lanes when plants are dormant—and a host of other groups with similar problems.

Barrons and Coulter (and later investigators) obtained best results by cutting brush before spraying. They recommend spraying stumps either during the summer or any time during the dormant season with a solution of one part by volume of Esteron 44 in kerosene. Resistant species will require a stronger solution—up to five parts of Esteron 44. The simple knapsack sprayer is usually an adequate tool for stump treatment. One man with such equipment can keep up with a cutting and both chemical and labor costs for such treatments are low.

Right—Abundant suckering from a sassafras stump which was cut early in the fall and received no treatment. Left—Dead sassafras stump cut early in fall and sprayed with Esteron 44 in fuel oil.

2, 4, 5-T

In 1947 Dow research workers discovered that 2, 4, 5-trichlorophenoxyacetic acid is a very effective foliage spray against certain species that are resistant 2, 4-D. These include osage orange, hickory, brambles and red-gum—sprayed either as a brush or stumps, when growing or when dormant. Obviously, experimenters soon were mixing 2, 4-D with 2, 4, 5-T and the results were much like those anticipated. A mixture of one part each of Esteron 44 and Esteron 245 in 98 parts of kerosene gives excellent control of stumps of the more resistant species.

A number of organic solvent carriers have been tested for these two ester formulations. None proved better than kerosene. For foliage spraying during the growing season, both are applied in water. For this purpose, label directions should be followed.

Whenever stump spraying is undertaken, tests have indicated that best results are obtained with close-to-the ground cuts and by spraying immediately after cutting. An immediate spray follow-up apparently kills more tissue, Low cuts mean less suckers, and less suckers means that stumps will be easier to see when spraying.

A knapsack sprayer fitted with a fan-type weed nozzle of medium orifice size is suggested for stump treatment. Pressures need not be high and very little pumping is required. A quick shut-off valve will help conserve solution. Follow-up treatment will pay big dividends. Continuous maintenance on a triennial basis will prevent new seedlings and recovering old growth from gaining a foothold.

*Species controlled by dormant spraying include:

Elm
Locust
Wild Cherry
Hawthorne
Dogwood
Choke Cherry
Elderberry
Willow

The Arborists Clinic

Fig. 1—The species form of European Smoothleaf Elm

Fig. 3—The Globe-head form of the Smoothleaf Elm

"Famous Pairs"—plus

The European Smoothleaf elm (Ulmus carpinifolia) and two varieties, the upright Wheatley elm (U. c. sarniensis) and the Globe-head elm (U. c. umbraculifera).

By Edward H. Scanlon

Diversity of form; color and texture of foilage, variations in height, are all attributes of the many trees available to the careful planner in the field of street tree management. The many varied sites that come within the purview of the city arborist make it absolutely essential that he have in his "tool kit" of trees, species and varieties that conform to these attributes.

Three trees, expanding the "Famous Pairs" theme, that give diversity in the first and third of the above measurements, but a very acceptable and needed conformity in color and foilage texture, are the species European Smoothleaf elm, and its two varieties the Wheatley elm and Globehead elm.

A world of opportunity is presented in the proper application of these diverse forms to streets where the space requirements are adequate. Conversely where the space requirements are inadequate for one they may be admirable for one of the others.

The species (fig. 1) is a wide spreading tree nicely formed with a slightly pointed crown. It will develop a large trunk and because of this and its spread needs ample space for proper display and orientation. It should have no less than a twelve to fifteen foot planting space with at least a forty foot setback. If the factors exist and the street is narrow the trees can be staggered; a wide street is necessary if the trees are to be planted opposite. Occasionally this tree will be umbrageous in form, but usually is excurrent with large strong lateral limbs. The specimen in figure 1, has a spread of forty feet and is about forty-five feet tall. Recommended planting space is 75 feet.

Forming a direct contrast to the species is the upright or Wheatley variety (fig. 2). This tall narrow growing tree is characterized by having a strong central leader with weak laterals. Structurally however the tree is strong and tough. The two trees pictured are on the grounds of Charlie Irish in Bratenahl. They are forty feet tall with a spread of twenty feet. The trunk growth is slow and consequently the tree will endure a much smaller planting space than the species. On the basis of observations even a four foot space should accommodate this tree for at least fifty years, altho a five or six foot space is

Fig. 2 — The upright form (Wheatley) of the Smoothleaf Elm.

more desirable. This tree is particularly well adapted to streets where the building setback is shallow, or on business streets. On business streets the trees should be spaced at least sixty feet. They can be brought down to fifty feet on residential streets.

On streets where overhead wires would require severe, disfiguring clearance, the Wheatley can be used advantageously, provided there is sufficient space in the planting area to move the tree slightly off center so that the tapering crown will ascend past the wires, and not thru them.

Should, however, the planting space be too narrow to offset the wires, and should the wires be from 35 to 40 feet off the ground we can fall back on the "plus" tree of this discussion, the Globehead elm (fig. 3). The Globe-head is a tree characterized by a round tight crown, with long tough, fine branches. Should it become necessary to prune for clearance of wires the growth is such that the natural contour of the tree could be preserved; also because of the absence of heavy limb growth, the stimulation that occurs at a large cut would not take place with the result that one pruning would prevail for upwards of five or six years. This economy in maintenance should entitle the tree to high consideration in street tree management.

The Globe-head is resistant to snow and ice and because of its formal shape is desirable for use on freeways and other important arterials as a safe tree. Even were the tree to be uprooted, which is highly improbable, and should it fall on a passing car the light twiggy growth would inflict no serious damage.

Propagation of the Globe-head is effected by working the form on a seven foot standard of English (U. procera) or Scotch (U. Glabra). The Cleveland Division of Shade Trees have grafted it successfully on Siberian (U. pumila). The Wheatley is propagated by budding on either Scotch or English stock.

These three trees offer a fine opportunity for diversity and utility of planting on a street. They give an opportunity to coordinate lighting and overhead wires and still effect the ends toward which all good street tree management should be aimed—low maintenance, shade and a high degree of dignified embellishment.

Salem, Oregon, Nov. 15, 1948

Circulation Manager,
TREES,
P. O. Box 5607,
Cleveland, Ohio.

Dear Madam:

Enclosed please find a U. S. Postal Note for the paltry sum of 35c for the—Sept.-Oct. 1948, Vol 8, No. 6 Issue, TREES.

Said issue contains a most marvelous article entitled:—

"Dawn Redwood"

And much oblige.

And probably occupying the same cubicle as yourself, please tell the "Dear Editor" of TREES Magazine to grab a shovel and go to the hot place. I refer specifically to Mr. Edward H. Scanlon.

Why in the world any Californian would go back East to edit such a measly little sheet in all that snow, wet, and slush, is beyond me.

Shouldn't he know by now that the BRAINS of the United States is found on the Pacific Coast—especially in the environs of Berkeley.

Ask the honorable high-hatting gentleman (?) if he remembers the day that he took Oregon's "Botanical Tramp" out for a ride, Saturday, February 18, 1939, to look at some "Blankety-Blank trees" in some one's yard in the little village of Santa Monica, California.

Tell the "Blankety-Blank" old sea urchin that I am expecting the desired issue of TREES magazine by *return mail* or I shall set some of his Pasadena cronies on his trail and make it a lot hotter for him in Cleveland that it ever was in California.

Tell him that I am attempting to write a little book on Oregon Woods, and that if he doesn't give me most favorable review that I shall wring his ..... neck.

Also give my best regards to the 'office cat.'

Yours truly,
Oliver V. Matthews.
1393 South 12th St.
Salem, Oregon.

ED's NOTE: You are honest anyway when you say "attempting to write." However, it will probably be useful as a paperweight. Come to Cleveland sometime, if you can find your way out of the drizzle, and enjoy some real weather and trees.

Tree Men

We climb up trees and saw and cut,
And knock off stubs and paint the butt;
We climb and strain in wind and rain,
At things in general we complain;
And we cuss our dangling paint pot,
And swear we'll quit and all that rot.
It's hard to saw, it's hard to climb,
It's tough to tip walk at any time.
We're apes, we're monkeys without tails,
We bark our shins and nick our knuckles,
We're pinched by belts and ropes and buckles;
And still we're at it every day,
We saw and paint the hours away;
'Cause some old trees we patch and mend,
Have seen generations rise and end.
A tree's a giant on this earth,
Where lesser things are given birth.
These trees have grown in wind and rain,
And withstood nature's stress and strain.
For all we know, they might pity those,
Who squat in the shade of their silent rows.

—*John J. Traudt.*
Wauwatosa, Wis.

Dear Ed:

Immediately upon reading the query about the Augustine Ascending Elm, (TREES Magazine, June, 1948, page 10) I called Mrs. Augustine, the widow of the man who developed the tree, and was rewarded with the following information. The tree is being tested thoroughly for disease resistance and by contacting Mr. William Beaudry, 932 E. 50th, Chicago 15, Ill., up-to-date reports may be obtained.

Sincerely yours,
J. D. Barth,
Evergreen City Tree Experts,
Bloomington, Illinois.

Tree...

National Arbor Day Campaign Set

The coming year offers the recently established National Arbor Day committees in seventeen states a golden opportunity to give the program its greatest boost since its inception eight years ago.

The occasion is the fact that the legislatures of the states will be in session after Jan. 1st, 1949. Each committee should be prepared at the opening session with a bill, and a sponsor, for the legalization of the "Last Friday in April" as National Arbor Day.

Legislation in the various states seems to be the practical way in which to obtain a single uniform observance date in the majority of states. The method employed, during the past years, of writing the Governor each year, and then having to wait for his proclamation, which may or may not be the desired date, is unsatisfactory and will not permit of making plans far enough ahead to accomplish any tangible good.

Should this date become established in the states wherein committees have been set up, it is simple to foresee the great amount of nation wide publicity that would accrue to the entire field of horticulture and forestry.

You are urgently requested to write the committee chairman in your state and offer assistance. You can contact your state representative and Senator and ask that he back the bill. This program which can reflect in badly needed better public relations should have the endorsement of all and we should not depend on the efforts of one man and his committee. This obviously is not fair to the committee.

The national organizations that have endorsed National Arbor Day are; the National Shade Tree Conference; the American Institute of Park Executives; the National Arborist Association and the American Association of Nurserymen. If you are a member of any, or several, of these organizations you should be on the firing line.

The American Association of Nurserymen thru its secretary, Dr. Richard P. White is planning a big publicity campaign for 1949. The theme of their campaign will be "Plant America" and they are convinced that a National Arbor Day would be an excellent tie-in for this campaign. A committee will meet soon in a mid-western city to discuss ways and means.

The National Arbor Day state chairmen are as follows:

Connecticut—Joseph A. Dietrich, Supt., Division of Parks and Trees, Greenwich.

Illinois—Noel B. Wysong, Vice-President, Midwestern Chapter National Shade Tree Conference, River Forest.

Indiana—Kenneth B. Flaig, Flaig and Flaig, Arborists, Fort Wayne.

Iowa—Paul L. Sandahl, Supt., Des Moines Park Board, Des Moines.

Maine—T. E. McSherry, Western Maine Forest Nursery, Fryeburg.

(Continued on Page 26)

Observe NATIONAL ARBOR DAY *Last Friday in April*

A PROCLAMATION

(National Arbor Day)

WHEREAS, it is an excellent custom for the various States to set aside one day of the year for their citizens to plant trees, and

WHEREAS, the planting of trees by the citizens on such a day will benefit our own and succeeding generations, and

WHEREAS, the conservation and increase of our forest resources is a matter of vital interest to all Americans, and

WHEREAS, the planting of trees deserves the fullest encouragement and

WHEREAS, in the interests of a unified, national observance of Arbor Day one special day should be observed throughout the nation, regardless of whether climatic conditions may make tree-planting ceremonies possible at that time,

NOW, THEREFORE, I, J. Strom Thurmond, Governor of South Carolina, do hereby designate and proclaim the last Friday in April (April 30) as National Arbor Day in our State, and urge schools, civic organizations, and citizens to give sincere thought to the conservation of our forests, to the ornamentation of our streets and highways with trees, to the establishment of more embowered parks, to the consideration of orchard plantings, and to methods of preventing vandalism on all forest, shade, ornamental, and fruit trees.

Given under my hand and seal this 5th day of March in the year of our Lord, nineteen hundred and forty-eight.

(SEAL)

J. STROM THURMOND,
Governor.

* * * *

STATE OF INDIANA
Executive Department
Indianapolis

PROCLAMATION

National Arbor Day, April 30, 1948

To All Whom These Presents May Come, Greeting:

WHEREAS, It has long been an established custom in the United States for the various states to set aside one day in the year on which to study and to plant trees, and

WHEREAS, the designation of this day is left to the discretion of the Governor in many states, and

WHEREAS, due to climatic differences this designation varies in many parts of the country to the extent that in hardly any of the states the same day of the year is designated, and

WHEREAS, it is realized that climatic discrepancies may affect the actual planting on the same day throughout the states, still in the interests of a unified, national observance which would tend to more greatly impress on a greater number of people the economic, cultural, esthetic, civil and horticultural value of trees to the nation as a whole, now

THEREFORE, I, Ralph F. Gates, as Governor hereby designate and proclaim the last Friday in April as

NATIONAL ARBOR DAY

I urge that all schools, civic organizations, newspapers, radio and the various political subdivisions collaborate to bring to our citizens the manifold benefits to be derived from the planting, care and knowledge of trees. I urge that all citizens give sincere thought to the conservation of our forests; to the embellishment of our streets and highawys with suitable trees; to the establishment of more beautiful parks through the planting of trees; that the economic benefits to be derived from well considered orchard plantings be studied, and finally that each citizen shall constitute himself as a committee of one to discourage vandalism, in any form, on all forest, shade, ornamental and fruit trees.

In testimony whereof, I have hereunto set my hand and caused to be affixed the great seal of the state of Indiana, at the capitol, in the city of Indianapolis, this 3rd day of March, 1948.

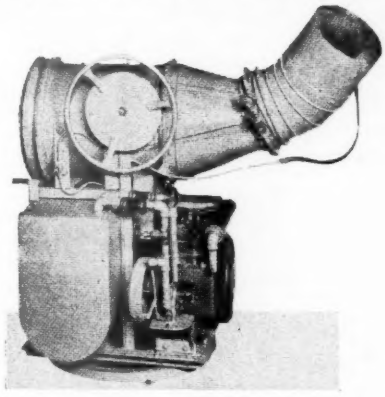
(SEAL)

RALPH F. GATES,
Governor of Indiana.

IMPORTANT

Never before in the history of spray machinery has there ever been placed upon the market a sprayer of such compact dimensions and containing as a unit the wide range of accomplishments offered to you by the "Orchardair" mist sprayer.

Wafted Air...



Its sturdy construction, light weight, high efficiency, flexibility of operation and low cost, is rapidly making the "Orchardair" mist sprayer a favorite among

Park Departments, Commercial Arborists, Fly and Mosquito Control Operators and Agriculturists.

This popularity makes it a necessity that you place your order for an "Orchardair" at an early date so that we can schedule our assembly and assure your delivery date.

●

Please Place Your Order Early.

This Will Help Us To Help You.

●

OUR GUARANTEE OF GOOD FAITH

The price of the "Orchardair" mist sprayer is $1450—F. O. B. Greenfield, Massachusetts.

Should we be obliged to increase the price of the "Orchardair," all orders taken before the rise in price will be honored at $1450.

If conditions make it possible for us to lower the price, all orders will be honored, according to the price at date of delivery.

GREENFIELD SPRAYER CO.

185 Turners Falls Road —Greenfield, Massachusetts

DISTRIBUTOR MIDDLE AND FAR WEST

MIDWEST MIST SPRAYER COMPANY

Westlake, Ohio

NAA NEWS

By PAUL E. TILFORD, *Secretary*
Box 426, Wooster, Ohio

A Lesson in Ethics

Mac was the first automobile dealer in my town. He started out selling some kind of a chain driven contraption that the present generation pokes fun at when they go to a museum. Later, he handled Studebakers, then Chryslers, Plymouths, and ended up a few years ago with the Packard agency.

Practically every car dealer in the county attended old Mac's funeral. The local newspaper carried a two-column editorial. He was a man everyone respected and he was reasonably prosperous. He had never cut prices by giving high trade-in allowances and his word had always been "good as his bond."

In the middle thirties I had scraped enough money together to trade in an old Essex that was falling apart and make a down payment on a new car. The choice had narrowed down to either a Ford or Plymouth. When Mac was working his hardest to get my name on the line for a Plymouth, just to needle the old fellow a little, I said, "Mac, what about the Ford? Is it a good car?" Old Mac took a deep breath and looking straight at me, said, "I don't know much about the Ford, but it must be all right. A lot of people drive them. I'm selling the Plymouth. I know it is a good car and will give you service and I'm standing back of it." Well, I bought the Plymouth.

A few weeks ago I went over a pretty good-sized tree job with a member of the National Arborist Association on the grounds of an industrial concern. Several outfits had tried for the job but this fellow landed it. He didn't know exactly why until one day the vice-president who authorized the work said, "Do you remember when I asked you about certain other tree men who are competitors of yours? Your reply was 'I don't know much about them but I understand they do good work' and you went right on telling me how your company would handle this job. That was when I decided to give you the work. I had also asked the others the same question and they started right in telling how rotten their competitors were."

It sort of reminded me of old Mac selling automobiles. I wonder how many sales have been lost by running down a competitor. Think it over. I may be wrong, but it would seem to me to be more effective salesmanship to work at selling one's self and one's services than to spend time with a prospective client belittling a competitor.

* * * *

New Members

The following companies have become members of the National Arborist Association during the past few weeks:

Wagner Tree Surgery Co., Fred E. Wagner, 538 East Euclid St., McPherson, Kansas; H. S. Cochran, Sr., 1117 4th St., S., Moorhead, Minn.; Midland Tree Expert Co., Leslie C. Smith, 541 S. 31st St., Omaha, Neb.; Streving Tree Service, Arnold Streving, 430 W. 2nd St., Elyria, Ohio; Forest City Tree Protection Co., John C. Lanphear, 1884 Green Road, S. Euclid, Ohio; Kendall Steadman, 314 North Main St., Medina, N. Y.; Town & Country, Inc., David M. Cordray, Jr., 5925 York Road, Baltimore, Md.; Maxwell Tree Service, Sam C. Maxwell, 6621 Pinkney St., Omaha, Neb.

* * * *

That the Dutch elm disease fungus is transmitted almost exclusively by elm bark beetles is a well-known fact. Likewise, it is known that feeding of the beetles on elms can be prevented by DDT. The Dutch elm disease control problem then is one of finding an economical and practical means of keeping elms so thoroughly covered with DDT that no beetles will feed on them. That sounds simple but in actual practice where large numbers of big trees are concerned, it is not simple.

Hydraulic sprayers have been improved to the stage where they almost equal modern fire fighting equipment. The development of the mist blower was a great advancement in the field of spray material applicators. But both types of equipment have their limitations and it is interesting and encouraging to know that research is trying to find new and better ways of depositing DDT in the tops of the tallest elm trees.

Last month I was in Connecticut and went with Phil Hansling to Thompsonville where a demonstration and experiment was being made on methods of applying DDT to large elm trees. The following cooperators were assisting with the tests: Bureau of Entomology and Plant Quarantine; Connecticut Bureau of Roadside Beautification; Connecticut Agricultural Experiment Station; John Bean Manufacturing Company, through

Left — Helicopter hovering over Elm tree spraying DDT in a Scolytus beetle experiment.

Below — Helicopter showing boom extending to left of machine, from which spray is expelled.

their dealer, F. C. Matteson; Card Helicopter and Airplane Services; and Shell Oil Company.

Plots containing comparable large elms were selected and sprayed with DDT by using the following equipment: 1. hydraulic sprayer; 2. Rotomist; 3. Pott's mist blower, and 4. helicopter. Also plots were sprayed using a combination of each of the pieces of ground equipment from below and the helicopter above. Following spraying, samples were to be taken from different parts of the trees to be used for analyses and beetle feeding experiments. The results will be reported by the cooperating agencies when the experiment is completed.

Spraying the trees with a helicopter from above was really an interesting sight. The machine was equipped with a boom which can be seen in the photograph. The DDT was applied in a concentrate form from a number of nozzles on the spray boom. These helicopters appear ideal for spraying the tops of tall trees. The machine can ascend straight up into the air, can turn sharply, can move ahead very slowly, can stand still in the air over a tree, and what is almost unbelievable it can back up. (I remarked that not even a bird could fly backwards, but my good friend Phil reminded me that a humming bird can.) If helicopters were a dime a dozen, it is my opinion that they would soon solve the tall tree spraying problem. Unfortunately, at this time they cost more than several hydraulic and mist-blower sprayers combined and the maintenance and operation is very high.

A. H. Dill, Farquhar Western Manager

Farquhar Names A. H. Dill Western District Manager

The A. B. Farquhar Company, manufacturers of Iron Age Farm Equipment, Conveyors, Hydraulic Presses, Sawmills and Food Processing Machinery, recently announced the appointment of Mr. A. H. Dill as Western District Manager. In this new capacity Dill will serve as Direct Factory Representative covering sales and service outlets, located in the Far Western States and part of Canada, of all Farquhar-Built Equipment.

Mr. Dill has been with Farquhar four years as Assistant Sales Manager of the Iron Age Farm Equipment Division and spent a good bit of that time in the West. Prior to his association with the company, he was employed in sales capacities by Kraft Foods and Republic Aviation. He is an engineering graduate of Drexel Institution, Philadelphia, Pa.

New Western Headquarters for Dill and Farquhar are at 720 Magnolia Street, Menlo Park, California.

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Keep the Advertisers in TREES Magazine. Patronize them.

The Cause and Control of Deficiency Chlorosis

By S. B. Mecca
Schuylkill Chemical Co., Philadelphia, Pa.

When the leaves of plants become blanched or yellow, and there is no disease involved, the condition is referred to as *"Chlorosis."* This condition presents many serious problems to those who are interested in maintaining healthy-looking plants. The nurserymen and retail florists are especially provoked and embarrassed when they find that the foliage of their plants is losing its lustrous green color and they become unmarketable.

The condition manifests itself *both indoors and out,* at any time of the year. In the early stages the veins of the leaves become pale, soon the entire leaf takes on a yellow or very pale appearance and sometimes falls off. If allowed to continue the entire plant is affected, and, should the foliage be a complete loss there is little hope for the survival of the plant since, as we all know, the leaves play an important role in the growth of plants.

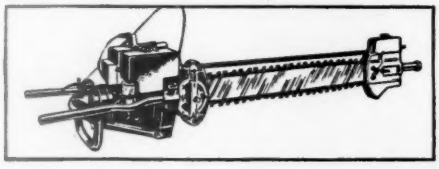
To explain the condition, we might think of it the same as *"human anemia."* It is well known to most of us that unless the blood contains a specific number of red corpuscles ("green" for chlorophyll in plants), the body appears pale and a person so affected loses vigor. Our blood depends on various nutritive elements such as vitamins and minerals to maintain its healthy condition and we find it necessary to supply them daily by proper diet. However, there are times when our organs do not function properly and the food supplied is not digested so that the blood does not receive any replenishment. In such cases the vital elements which are lacking may be supplied by injections. When the loss of blood is sudden or great it is replaced by blood-transfusions.

"Anemia" therefore is a term which is used for human blood-deficiency, whereas "Chlorosis" is the term used for plant chlorophyll-deficiency. Perhaps the term "phyto-anemia" (plant-anemia) would show this similarity more effectively.

The green color in the leaves and plant-structure (as mentioned before) is due to the presence of a complex substance known to all of us as *chlorophyll.* I say complex because chlorophyll is not a single substance as many may suppose, but it is composed of two components—*chlorophyll "a"* and *chlorophyll "b."* These contain carbon, hydrogen, oxygen, nitrogen, and magnesium, having the chemical formulas of $C_{55}H_{72}O_5N_4Mg$ and $C_{55}H_{70}O_6N_4Mg$ respectively. Chlorophyll "a" is blue-black and chlorophyll "b" is dark-green. Together they impart a green color to living plants. The chlorophyll is found in protoplasmic bodies known as *"Chloroplasts,"* which are present mainly in the leaves and other green portions of the plant.

To best describe the function of chlorophyll, let us consider the *leaf as a factory* which is engaged in an all-important process called *"Photosynthesis."* In this process sunlight is the power, the chloroplasts (containing the chlorophyll) are the working machinery, carbon dioxide and water are the raw materials and starch as well as oil are the finished products, while oxygen is a waste product.

From these facts it can be seen how important the function of chlorophyll is and the disastrous effect its lack can have on the plant when there is a severe deficiency of this complex substance. Chlorophyll appears to be intimately connected with the conversion of the radiant energy of the sun's light into the chemical energy by which plants



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"The trouble-free saw you have is a pleasure to use. The motor stands up and starts well. The first Warren chain we used cut fifty-six hours cutting time, about three months, without sharpening it. In this time we cut all kinds of wood. On the fifty-fourth hour we cut one-third the way through an iron bar three-quarters of an inch thick. This dulled the chain but we used it the rest of the day and it cut fair. We used this same chain one hundred eleven hours cutting time, six months use. We find that the Warren chain will cut wood any way we wish to cut it. It is fast and causes no trouble unless misused badly. The saw works well in rain, snow, cold or hot weather."
—*A Prominent Tree Surgeon.*

"In regards to your inquiry about our Lombard Chain Saw we have this to say. The Lombard Chain Saw is to our knowledge as good a saw as any on the market today. We find the Warren chain to be the best obtainable. We have cut red and white oak for 60 and 70 hours when we had to, however we have found since acquiring another chain that it is profitable to sharpen the chain after 40 hours."
—*State Department of Forest Conservation.*

"As you will recall the first chain we had we returned to you for sharpening. We were very much satisfied with its performance. The replacement you sent us was a chain with a hollow ground face. This new chain cuts even better than the old one in maple and elm . . . We have also been cutting both green and dry hemlock and the action here is apparently the same as the old chain. The new chain as yet shows no signs of dulling after about 60 hours of service."
—*State Department of Forestry.*

LOMBARD GOVERNOR CORPORATION
Ashland, Massachusetts

LOMBARD LG CHAIN SAWS

build up their structure from the elements of carbon dioxide and water.

What are *the essentials of proper chlorophyll development* so that it can properly perform its function of "Photosynthesis"? They are—the right amount of sunlight and sufficient amounts of Iron in available form (other elements such as zinc, manganese also contribute). It has been shown definitely that Iron has a direct bearing on the formation of chlorophyll and without its presence chlorophyll deteriorates.

Chlorosis is thus generally caused by too little sunlight; lack of some vital elements, especially Iron, etc., or it may even result when the *roots become water-clogged (false chlorosis).* Most often it is a case of elemental deficiency. Discoloration caused by diseased conditions are not usually referred to as "Chlorosis," they are designated as blight, rust, etc.

Proper soil condition and good feeding is absolutely essential in maintaining normal development of plants. But, as with the human system, the plant may not receive a sufficient supply of vital elements by this method. *If the iron contained in the soil is in an insoluble state* the plant cannot properly absorb it. There is also the possibility of faulty "circulation" in the plant so that the elements are not transferred up the stems to the foliage. Or some sudden and abnormal watering may have *leached the soil* temporarily of vital elements and the plant finds itself starving. However, in all cases *it is the absence of the elements in the leaves which actually causes the chlorosis* and which in turn brings about faulty sub-normal function. The condition may appear in slow stages or suddenly, depending upon the contributing causes.

To overcome chlorosis therefore, it is essential to *provide the lacking elements as quickly as possible where they are most needed* and thus aid the plant to resume normal function because once chlorophyll action has been restored the plant can take a new hold on life.

The fact that *leaves have the power to absorb* not only water but nutritive elements as well has been proven. Allow me to quote from a report by P. P. Pirone of the New Jersey Agricultural Experiment Station mentioning the work done by J. M. Hamilton, D. H. Palmiter and L. C. Anderson:

"These workers applied the nitrogen directly to the leaves instead of putting it into the soil. Their work was based on the assumption that nitrogen can enter the leaves and be assimilated in appreciable quantities. The work was conducted on several varities of apple trees. Nitrogen carriers were incorporated in several types of sprays, including wettable sulfur, lime and arsenate of lead. Three or four spray applications were made and significant increases in the nitrogen content of McIntosh trees low in vigor were noted . . . The trees were sprayed from the outside only. There is a possibility that even more striking results would have been obtained if the trees had been sprayed from the inside as well."

Trees Magazine—April, 1945.

It is essential that just the right amount of the needed elements is supplied in a form which may easily be assimilated by the leaves and immediately turned to practical value in restoring normal function. We, at *Schuylkill have for some time been experimenting* with this problem so as to chemically combine Iron and other important factors in such a manner that maximum results may be obtained. *"Jimp" is just such a combination and meets the need.* This has been proven by the fact that so many growers, nurserymen, florists and landscape architects have already written us mentioning that *they found Jimp most effective in overcoming the chlorotic condition of various types of plants, shrubs and trees. Jimp had helped where other known methods apparently failed.* A New England landscape architect for instance wrote us that he had for years tried to overcome the chlorosis affecting a rather extended area of varied vegetation on a large estate. Early last year

(Continued on Page 20)

Write for your copy

THE 1949 Hardie Catalog reveals many new and advanced features in the design and construction of High Pressure Sprayers. Shade tree pest control and the various other requirements which demand a high pressure sprayer today in forestry, park and public works maintenance operations all can be efficiently carried out by the same Hardie unit. Hardie Specialized Spray Guns for long distance and close work, high and low pressure weed booms, and other inexpensive accessories easily attached enable any Hardie to do many different jobs, providing more utility value than ever before.

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Norfolk Counts Its Trees

By F. Morris Forsberg
Assistant Superintendent of Parks and Forestry
Norfolk, Va.

When we started our STREET TREE SURVEY on March 1st, 1946, it was with mingled feelings of enthusiasm and misgivings. Some of the people with whom we discussed it said, "Sounds like a W.P.A. project to me;" other comments were luke-warm such as, "What good would it do you?" But they didn't talk us out of it and we started on March 1st, 1946 and completed the survey in December, 1947. We have now had the completed inventory to use for only ten months and are convinced already of its value. For instance, when the survey had been complete only two weeks, we had a call from the City Manager's office asking what it would cost to remove all the trees in four blocks. We were able to look up the size and species of these trees and give an estimate of removal cost in a few minutes.

This survey was made by a man who had been City Forester for twenty years and so pretty well knew his way around. He used for this work, forms on which he listed the presence or absence of curb and sidewalk, width of planting strip, notes on overhead wires in each block besides the number of each residence or business place. Then opposite each street number the existing trees were listed. Each tree's species, caliper breast high, date planted, and notes on its condition such as "Dead limb," Low branches," etc. In the case of Crepe Myrtles (of which we have about 20,000) the height was listed instead of caliper.

From these survey forms, the information has been typed on a "PERPETUAL INVENTORY" sheet. Besides the information gathered in the survey, these sheets have a blank headed, "Date and Cause of Removal" in which is made the final entry for each tree. As our work goes on and more trees are planted and some are removed, this information is entered by hand on the "PERPETUAL INVENTORY." In this way we know at a glance which entries are original survey, and which are plantings or removals done since. The loose leaf system makes it possible to remove from the binder each sheet as the trees listed on it are removed from the streets.

Because such an inventory had never been made before of Norfolk trees, we found out a lot we didn't know. We discovered that some of our guesses were very far from the facts. We had been guessing that we had a hundred thousand trees and found we only had 47,507.

We also discovered that we have 2,185 trees of five species which we class as "Undesirable." These species are Cottonwood and Lombardy poplars, Chinese elms, Wild cherry and Mulberrys. Our policy towards these "Undesirables" is to remove them whenever we can. This expression 'whenever we can' might be explained. Under the exsiting ordinance we "can" remove any tree growing on City owned property but we "can not" always get the approval of the people who live in the neighborhood to such removals. That is, we are not always able to get "the consent of the governed," which consent we believe to be so important that we always consult the people who might be interested. This, of course, only involves the "Undesirable" species of trees, dangerous or dead trees are removed whenever discovered.

Our Survey also showed us that we had 1549 Umbrella or Chinaberry trees. These are undesirable to the extent that we have not and will not plant them, but in places where they have been planted on City owned property, we overlook the rules and let them live out their natural life, which is short. Umbrella trees in Norfolk usually blow over before they grow large enough to do appreciable damage when they fall. We remove them on request, however.

All our trees are not "Undesirables" however. This Inventory now lists, in round figures, twenty thousand Crepe Myrtles, six thousand American Elms, six thousand oaks, five thousand sycamores and three thousand Norway maples or forty thousand desirable trees. The other four thousand of our 47,507 trees not mentioned above include thirty-

(Continued on Page 20)

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- Pruning Tools
- Bracing Material
- Tree Compounds

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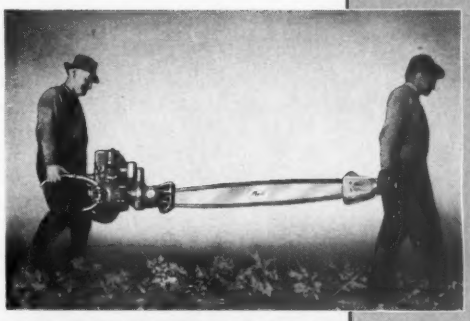

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Why take less, when dollar for dollar you get more in a Mall Power Saw. In addition to the above features, Mall Power Saws embody the highest quality workmanship and materials, the latest and best engineering advancements, and service-proven performance all over the world. A nation-wide network of service stations with precision tested parts and factory trained mechanics helps you get the maximum service from your Mall Power Saw. See and try a Mall Power Saw before you buy—no obligation.

There is a size and model available to fit your particular logging needs. The Mall Chain Saw has capacities ranging from 18 inches to 12 feet. The Mall Bow Chain Saw is designed to eliminate pinching when cutting small size timbers up to 24 inches in diameter. The Mall Circular Saw permits one man to fell, limb, buck or clear land. It has a 22-inch capacity. All three of these models operate from the same powerful Gasoline Engine.

Write for name of nearest Distributor. Demonstrations can be arranged.

POWER SAW DIVISION

MALL TOOL COMPANY

7803 South Chicago Ave., Chicago 19, Ill.

Chlorosis

(Continued from Page 17)

he used *Jimp* on a section of this plot and in the fall he wrote us that this section actually appeared green for the first time in years.

I would like to repeat that *Jimp* is designed not only to provide iron but also to give immediate relief to the starving plant by supplying other important elements such as Potassium, Phosphorous and Nitrogen in a *special organic chemical combination easily* absorbed by the leaves. *Jimp contains no Iron Sulphate! (Copperas).*

Also—after a patient's life has been saved by blood-transfusions it is of course folly to expect him to go on improving if his diet is not correct. Applying *Jimp* to the foliage is no substitute for proper fertilization of the soil. No one would look forward to taking injections or transfusions while taking no other nourishment than water.

The method of application is simple. One merely dissolves a certain amount of *Jimp* in hot water and adds sufficient cold water to make the specified quantity of solution. Then the cooled solution is sprayed (with any type sprayer) on the leaves of the affected plants. It may also be applied to the soil.

Results cannot be guaranteed, just like the physician could not guarantee that the patient will recover—he merely places his confidence in a drug which has proven its worth by the number of other patients who have benefitted by its use and which offers a chemically and physically proven method. The same is true of other products. One should examine its record, add a little faith, and the reward usually follows.

Norfolk Counts Trees

(Continued from Page 18)

five varieties of trees of which we have less than four hundred of each. These are such species as Dogwood, Spruce, Magnolia, several kinds of fruit and nut trees and one Redwood. (We believe our one Redwood to be the largest East of the Rocky Mountains. It is over three feet in diameter and seventy-five feet tall.)

The number of trees we have is just a small part of the value of such an inventory to us. With this inventory when a citizen phones our office, we can in a few seconds look up his particular tree and discuss his problems with him much more intelligently than we could before we had the inventory. If the call is about a Crepe Myrtle that does not bloom and we find by consulting the Inventory that at this address there are two large elm trees as well as a Crepe Myrtle we know at once that the trouble is too much shade for Crepe Myrtle blooms. If the problem is tree roots in a sewer and we find that a Chinese elm is the offender we can promise removal at once. If the offending tree was found to be a thirty-inch oak we would try other means of rectifying the trouble. If the request is for planting and we find from our Inventory that a tree was

(Continued on Page 26)

New "ROCKER" MOVER for BIG TREES*

- Handles up to 12-inch trees.
- "Rocks forward" for balanced load on truck.
- Superstructure removable for other uses of truck.
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- Fits any standard truck chassis.

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- PRATT'S 50% DDT—A dry wettable DDT that is micronized* to extreme fineness. *Trade Mark Reg. Micronized Processing Co., Moorestown, N. J.
- PRATT'S 25% DDT—A soluble DDT in a glyceride vegetable oil base of great safety to foliage.
- PRATT'S Emulsifiable 25% DDT—An emulsifiable DDT in an aromatic petroleum derivative base with emulsifier.
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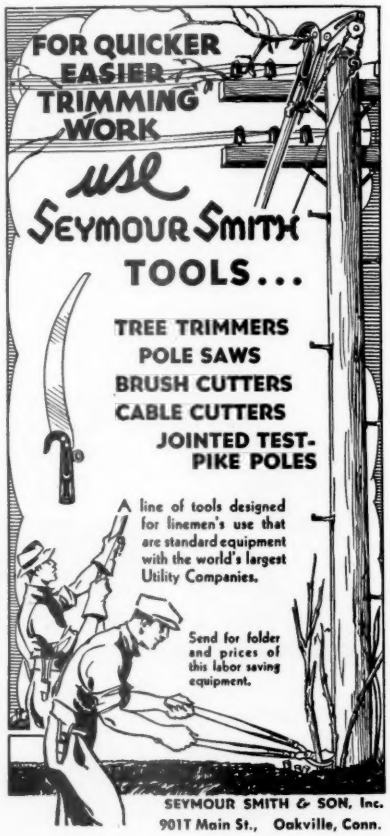
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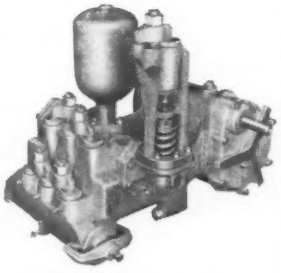
SCENIC boulevards, such as you find along the famous DuPont Highway in Delaware, do not stay "Scenic" when bugs and blight invade beautiful shade trees and shrubbery. Delaware's Department of Highways guards against such possibilities by protecting the boulevard's foliage the Iron Age way.

The Iron Age Skid-Mounted Sprayer (shown here), with its powerful, high-pressure 40-gallons-per-minute pump, helps protect the trees year after year for the State of Delaware with minimum amount of upkeep. During the "off" season, the skid-mounted unit is removed and the truck can be used for other purposes.

Municipalities, park boards, estate managers have all found it pays to protect shade trees and expensive shrubbery the Iron Age way. There are models and sizes for every shade tree spraying job. Contact your nearby Farquhar Iron Age Dealer, or write direct to: A. B. FARQUHAR CO., *Farm Equipment Division,* 3422 Duke Street, York, Pennsylvania.

PLANT AND SPRAY THE IRON AGE WAY



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SPRAYERS · DUSTERS · POTATO DIGGERS · WEEDERS
CONVEYORS · JUICE PRESSES · SPECIAL MACHINERY

Might Be Stump Answer

Designed to break frozen ground quickly, dig through hard clay and shale, and tamp soil at high speed, the Electric Ground Hog is now being produced by Turf Equipment Incorporated of Minneapolis, Minnesota.

The Ground Hog allows two men to work in cramped quarters while excavating, one operating the ground breaking tool while the other shovels out the loosened dirt. This versatile unit saves time, labor and operating costs for cemeteries, golf courses, parks, schools and other institutions or businesses with digging problems.

Weighing only 32½ pounds, the Ground Hog is balanced for easy, smooth operation. The operator presses down on the special "T" handle with built-in momentary switch to start the Ground Hog and releases the handle to stop it. The Ground Hog strikes 1950 blows per minute and this high speed action coupled with the air-blow principle reduces vibration to a minimum.

The Electric Ground Hog operates from a portable electric plant or high-line outlet and requires no separate air compressor. The unit is equipped with an 11-ampere motor which operates on 110-volt, 25 to 75-cycle A.C. or 110-volt D.C. The Ground Hog is easily portable, measuring only 21½ inches long and 15½ inches wide.

Three special drop-forged tools, frost wedge, spade and tamper are furnished with the Electric Ground Hog and it also accommodates all standard Black and Decker tools. Other standard equipment includes 20 feet of cord, momentary switch on handle; tool-retaining yoke mounted on the barrel; a sturdy, permanent carrying case and special oil.

Courts and Trees

(Continued from Page 8)

Bradley by the telephone linemen who did not have the owner's permission although they did have the permission of the selectmen of the town. Attorneys for the telephone company held that "whenever growing trees, whether within or without the limits of the highway, interfere with public travel, the town or its agents have the legal power to cut them down without notice to the land owner." In support of this contention they quoted such cases in Connecticut judicial history as *Ely vs. Parsons* (Conn. 55, 83), *Hewison vs. Parsons* (34, Conn. 142) and *Beardsley vs. Hartford* (50, Conn. 529). In addition they quoted at great length from non-Connecticut rulings, *Chase vs. Oshkosh* (81, Wisc. 313), *Johnson vs. District of Columbia* (118, U.S. 19) *and Detroit vs. Beckman* (34, Mich. 125).

Attorneys Moran & Alling, pleading for the telephone company, summed up their argument with this statement—"the telephone company, in acting under order and permit of the selectmen, is not liable for trespass for trimming of trees." In support of this contention they cited the case of the *Southern Bell Telegraph & Telephone Company vs. Constantine,* decided by the 5th Circuit Court of Appeals in 1894 and reported in 61, Federal Reports, 61.

Attorneys for Mrs. Bradley, the aggrieved party and owner of the trees in question, rested their case on this statement:

"Jurisdiction of selectmen over highways, in the absence of a special statute, was limited to make the highway safe for travel. The mere fact that the branches and limbs which were cut occupied space that the defendant desired or even needed for the erection of poles and fixtures, was insufficient to justify the orders of the selectmen."

To bolster this summation, the plaintiff's attorneys cited such cases as *Tomlinson vs. Leavenworth* (2, Conn. 294) and *Suffield vs. Hathaway* (44, Conn. 521-528).

Justice Torrance, presiding at the trial, awarded a verdict of $350 to the plaintiff, Mrs. Bradley, and summarized his findings in this manner:

"The selectmen had no power, without the plantiff's consent, to cut or trim the trees in question, to enable the telephone company to erect or operate its line in the new location; consequently, they did not and could not delegate that power to the defendant (the telephone company). The telephone company's right to use the highway at all for the purpose of erecting and operating a telephone line is given, as we have seen, by statute and it is given expressly on condition that it shall not be exercised so as to 'injure any tree without the consent of the owner'."

There is no doubt in my mind that the decision in the Bradley case had the effect of changing the attitude of the public utility companies towards indiscriminate tree trimming for many years.

The foregoing are but a few of the interesting tree cases of Connecticut legal history. There are many others. If time permits and the Editor of TREES is amenable; if, above all, the readers of TREES are interested, more cases will be written up and published.

Getting Down to Brass Tacks

We now have a system of marking trees that may be of great value to arborists. It is simply by numbering trees with numbered tacks. These tacks have a square nail with a barb running completely around the shank. The head is about ½ inch in diam. and numbered. The tack is made of white brass, non-rusting and can be hit with steel hammer without damaging numbers.

Advantages of using this system are obvious. Many clients do not know the names of their trees. You can furnish them with the names corresponding with numbers on the trees. This is good for your business. The numbers can also be used in estimating cost of work to be done, and in many other ways.

It makes an easy way to lay out work for your men. No mistake can be made. Nearly everyone can read numbers.

In planting jobs, trees to be planted can be numbered, and location can be numbered, so that the trees might go in the right places, though we don't guarantee this in these times.

The advantage of using these tacks on street trees is so obvious that nothing further need be said.

Tacks come in boxes of 100 each of numbers from one to 50, and in boxes of 50 each of numbers from 50 to 100.

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Capacity In Gross Tons	Minimum Distance between Hooks	Reg. Pull in Ft.	Net Weight	Price Regular Size	Price Extra Length per Ft.
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Arborists Short Course at Ohio State

The 20th Annual Short Course for Arborists will be held in Columbus, Jan. 12, 13, 14, 1949, with the Neil House as headquarters.

The course is sponsored jointly by the Ohio State University and the Ohio Chapter, National Shade Tree Conference. Dr. L. C. Chadwick has arranged a splendid program for what promises to be a record assembly.

Wednesday, January 12

9:00-10:30—Registration

10:30-11:15—The Role of Soil Aeration in Tree Growth. J. Boyd Page, Dept. of Agronomy, Ohio State University.

11:15-12:00—The use of Leaf Analysis in the Determination of Fertilizer Requirements of Trees. F. S. Howlett, Dept. of Horticulture, Ohio State University.

1:30 2:15—What makes a Plan Tick. Raymond Hasek, Dept. of Horticulture, Ohio State University.

2:15-3:00—Transplanting Some Difficult-to-Move Trees. E. W. Higgins, Frost & Higgins Co., Arlington, Massachusetts.

3:15- 4:00—Fertilization Practices. Norman Armstrong, White Plains, New York.

4:00- 4:45—Open Discussion of Transplanting and Fertilization Practices. Leader: L. C. Chadwick, Dept. of Horticulture, Ohio State University.

7:00- 8:00—Selling Landscape Planting and Maintenance Service. Martin Drescher, W. A. Natorp Co., Cincinnati, Ohio.

8:00- 9:30—Business Meeting, Ohio Chapter, National Shade Tree Conference.

Thursday, January 13.

9:30-10:00—Can Elm Bark Beetle and the Phloem Necrosis Leaf Hopper be controlled with DDT. Russell Whitten, U. S. D. A., Bureau of Entomology and Plant Quarantine, Columbus, Ohio.

10:00-10:30—Limitations of Mist Blowers. A. W. Meserve, United Arborists, Danbury, Conn.

10:45-11:45—Control of Some Important Insects of Woody Ornamental Plants. L. L. English, Section of Economic Entomology, Illinois Natural History Survey, Urbana, Illinois.

1:30- 2:15—Lawn Applications of 2,4-D May Damage Trees. Paul E. Tilford, Exec. Sec., National Arborists Association, Wooster, Ohio.

2:15- 3:00—Planting and Maintenance of Lawn Grasses. F. A. Welton, Dept. of Agronomy, Ohio Agri. Expt. Stat., Wooster, Ohio.

3:15- 4:00—Trees for City Streets—Program, Selection and Maintenance. E. H. Scanlon, Commissioner of Shade Trees, Cleveland, Ohio.

4:00- 5:00—Open discussion of Insects and Diseases, 2,4-D, Lawns and Trees. Leader: Paul E. Tilford, Exec. Sec., National Arborists Association, Wooster, Ohio.

7:00—Dinner. New and Unusual Woody Plants. George Graves, Boston, Mass.

Friday, January 14.

9:30-10:30—Hardy Mums—Panel Discussion. Leader: D. C. Kiplinger, Dept. of Horticulture, Ohio State University. Tom Kyle, Bohlander Nurseries Co., Worthington, Ohio.

10:30-11:15—Hemerocallis. Mrs. Julia Emigholz, Kenwood Iris Gardens, Cincinnati, Ohio.

11:15-12:00—Worthwhile Annuals. Arthur Hirt, Hirt's Greenhouse, Strongsville, Ohio.

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1:30- 2:30—Some phases of Landscape Design. Brooks Wigginton, Dept. of Landscape Architecture, University of Georgia, Athens, Ga.

2:30- 3:30—Landscaping the War Housing Home. Arnold Davis, Dir., Garden Center of Greater Cleveland, Cleveland, Ohio.

3:30- 4:30—Landscape Problems. Leader: Victor H. Ries, Dept. of Horticulture, Ohio State University.

Ohio Nurserymens Annual Meeting

John Siebenthaler, program chairman for the Ohio Nurserymen's Association, has sent the following program arranged for the annual meeting to be held at the Neil House, Columbus, Jan. 20, 21, 1949.

Thursday, January 20, 1948

9:00 A. M.—Registration—Mezzanine floor

10:00 A. M.—Business Meeting for Active Members

Call to Order—President Walter Truby
Roll Call
Introduction of New Members
Report of Secretary-Treasurer
Reading of Important Communications
Report of Committees
Executive—President Walter Truby
Local—Bert Kleinmaier
Legislative—C. O. Siebenthaler
Ohio State Dept. of Horticulture—Research Program, G. Walter Burwell and Elmer Hartmen
Appointment of Nominating Committee
New Business.

12:00 Noon—Adjournment

2:00 P. M.—"Report on Pest Control in Ohio Nurseries. John W. Baringer

2:30 P. M.—"Practical Points in Designing Small Landscapes". An illustrated lecture by Carl F. Wedell, Head of the School of Horticulture, Long Island Agricultural and Technical Institute, Farmingdale, New York.

3:30 P. M.—"Preferred Shade and Ornamental Trees for City Streets and Park Use"—Edward H. Scanlon, Editor of Trees Magazine and Commissioner, Division of Shade Trees, City of Cleveland, Ohio.

4:15 P. M.—Report of Nominating Committee and Election of Officers.

4:30 P. M.—Adjournment.

7:00 P. M.—Seventeenth Annual "Ye Olde Tyme Dinner," Grand Ball Room. Wear your jeans and aprons.

Friday, January 21, 1949

10:00 A. M.—"Report on Experience on recent trip to Australia and New Zealand." Professor A. M. S. Pridham, Department of Floriculture and Ornamental Horticulture, Cornell University.

10:45 A. M.—"A Year in the Nursery," a color motion picture depicting year round Nursery Activities and emphasizing soil conservation. Prepared and loaned by courtesy of Mount Arbor Nurseries, Shenandoah, Iowa.

11:15 A. M.—"Progress of Plans for moving the College of Agriculture at Ohio State University"—L. L. Rummell, Dean of the College of Agriculture and Director of the Ohio Agricultural Experiment Station.

12:00 Noon—Luncheon.

2:00 P. M.—Annual Meeting of Chapter Number 1, American Association of Nurserymen.

4:00 P. M.—Adjournment.

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Bow Trees

By S. W. Bromley, Ph. D.
Bartlett Tree Research Laboratories
Stamford, Conn.

This is an article on bow trees. By bow trees I do not mean the Sacred Bo Tree of India but those unusual and remarkable specimens of evergreen trees shaped in the form of a bent bow which one occasionally runs across in the woods of the Northeastern States. Usually they are either white pine or hemlock.

As a boy, roaming the woods of my native Massachusetts, I frequently wondered about the reason or cause of the Bow Tree. On rare occasions a white pin or hemlock, usually growing in a swamp or along a stream, where there was plenty of soil mosture, presented a sweeping arc of trunk growth like a drawn bow, instead of a straight upright form.

A Bow tree formed as described by the author in text.

The reason for this type of growth became apparent a few years following the New England hurricane of September 21, 1938. Two years after this storm had overthrown so many young pine and hemlock trees, some in moist sites were observed alive and growing even after being overthrown and lying recumbent on the ground. Where their tips were in full sunlight for the majority of the day, and their roots in good soil with plenty of water, many such trees were turning their shoots toward the sky in upward growth. If allowed to live such trees would undoubtedly eventually become picturesque Bow Trees. Most of them, however, were cut up for lumber so that in future years, the Bow Tree will probably still be as rare as ever.

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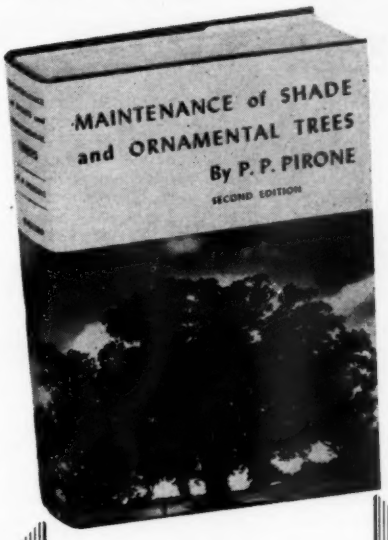

MAINTENANCE OF
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By P. P. PIRONE
Foreword by L. H. Bailey

This invaluable handbook should be in the working library of every arborist, tree warden, park superintendent, forester, and home owner. It covers the entire field of tree care: how to transplant, fertilize, prune, brace, spray, detect and control injury or disease. With added information on DDT and other new insecticides and ultra-modern spraying equipment.

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Authors and Books

The following books may be ordered from TREES Magazine, Box 5607, Cleveland, Ohio.

GUIDE TO SOUTHERN TREES, by E. S. Harrar and J. G. Harrar. McGraw Hill Book Co., Inc., 712 pgs. illus. $4.50.

In this book, the authors describe the more than 350 aborescent species native to the southern states. The initial portion of this book introduces the reader to tree nomenclature and classification, and reviews the important botanical features of leaves, flowers, fruit, twigs and bark which are commonly used in field identification. Following this is a section devoted to the coniferous trees of the region. A third section deals with the many southern broadleaved species. A short glossary and bibliography of selected references complete the text material.

The descriptions of individual tree species are presented in a clear and concise manner with minimum use being made of technical terminology. Included are notes of unusual interest or historical significance pertaining to many of the trees described, together with information on usage and the valuable products derived from the leaves, flowers, fruits, wood or bark.

THE PRUNING BOOK, by Gustav L. Wittrock. Rodale Press, Emmans, Penna. 172 pgs., illus.

So many of the shrubs and trees in the grounds of the average American home and town or city are so badly pruned that their natural beauty is replaced by the ugliness of abnormality and their vigorous growth and flowering by premature old age. These conditions emphasize the need of a pruning guide which is well illustrated and easy to follow.

This book explains the advantages of pruning and gives specific directions for the pruning of specific classes of plants.

By proper pruning a gardener gives beautiful shapes to his trees in much the same way as a potter gives shapes and form to his pottery. It is one of the most creative and interesting aspects of gardening. Pruning enables the gardener to keep his shrubs and trees in right proportion to his house and with each other.

Dr. Wittrock has treated all aspects of pruning shrubs and trees so completely and so simply that all who grow them for profit or for pleasure may know how to prune for best results. This book gives expert advice on pruning trees of the orchard, trees of the homegrounds and parks, fruiting shrubs, ornamental shrubs, hedges, and evergreens.

THE CULTIVATED SPECIES OF PRIMULA, by Walter C. Blasdale. University of California Press, Berkeley, Calif. 284 pgs., illus. $7.50.

This book will interest garden lovers as well as students of the plant sciences.

Early chapters define terms used throughout the book and point out details of the life cycle of the genus, the means of reproduction, the plant's adaptability to diverse surroundings, and its ability to manufacture various chemical substances. It is essential for gardeners to understand these activities in order to grow primulas successfully and to improve the species' attractiveness.

The author also presents hints on the successful cultivation of the primula gleaned from his own experience.

Remaining chapters are devoted primarily to descriptions of the groups into which the genus has been divided. Professor Blasdale also discusses the widespread neglect of the primula in the United States, in contrast to the interest shown in its cultivation by the English. However, he encourages would-be primula enthusiasts by pointing out the success that primula growers have had in the coastal regions of Oregon, Washington, California, and British Columbia. The author suggests how to go about starting a primula "patch" and presents a short bibliography.

HORMONES AND HORTICULTURE, by Avery, Johnson, Addoms and Thomson. McGraw-Hill Book Co., Inc., New York. 326 pgs., illus. $4.50.

The authors of this significant contribution to botanical and horticultural science present the first volume to cover the important new field of the use of chemicals involving hormones in the control of plant growth. The authors have gathered together in one volume the widely-scattered information on the subject, present specific directions for applying chemicals, evaluate their usefulness in horticultural practice, and point out trends in the field.

INSECT TRANSMISSION OF PLANT DISEASES, by J. G. Leach. McGraw-Hill Book Co., Inc., New York. 615 pgs., illus. $7.50.

The increasing amount of evidence that insects play an important part in the transmission and spread of many plant diseases is ably summarized and coordinated in this fine work.

In discussing a disease only those facts relevant to insect transmission have been included by the author. Much information of general interest in plant pathology has been omitted purposely, but suitable references are given.

The book should be a valuable addition to the arborists' working library. Some of the chapter headings will give an idea of the data of interest to the arborist: The Inter-relationships of Plants and Insects; Symbiosis between Insects and Microorganisms and its Significance in Plant Pathology; The Relation of Insects to the Spread and Development of Plant Diseases; Insects and Fungus Diseases; Methods Useful in the Study of Insect Transmission of Plant Diseases.

MAINTENANCE OF SHADE AND ORNAMENTAL TREES, by P. P. Pirone. Oxford University Press, Inc., New York. 436 pgs., illus. $6.50. Second edition.

The second edition of Pat Pirone's splendid guide to tree care is off the press. The original, published in 1941, is well established as the outstanding book on shade tree care in the past thirty years.

The war brought a considerable number of new developments in spraying technique and spraying materials. These are capably discussed in a twelve page appendix under the following headings: Insecticides; Fungicides; Combination Sprays; Modern Spraying Equipment; New Tree Equipment; Newer Tree Paints; Chemical Injury to Trees; Injury from Industrial Fumes; Fastigiate or Upright Trees; Diseases of Shade Trees; Insect Pests of Shade Trees, and Additional Sources of Help.

To those who were unable to obtain a copy of the first edition, when the supply was exhausted, we heartily endorse this new enlarged edition of this standard work.

Mist Spraying

(Continued from Page 7)

should be thoroughly familiar with his equipment, his chemicals and the proper method of application nor should it be too difficult for almost anyone to become a successful mist sprayer operator.

In closing, hope is expressed that some content of this article may be of value to the owner or prospective purchaser of a mist spray machine. Take advantage of the economy offered by mist spray.

If one drop will do the job, why use two?

National Arbor Day

(Continued from Page 12)

Maryland—Hollis J. Howe, Baltimore.

Michigan—Carl Fenner, Secy-Treas., Michigan Forestry and Park Association, Lansing.

Minnesota—Gregory J. Lucking, Horticulturist, Board of Park Commissioners, Minneapolis.

Nevada—Jack J. Varnum, Reno.

New York—F. L. Parr, Parr & Hanson, Inc., Hicksville.

North Carolina—Alex C. McRae, President, Carolina Tree Service, Inc., Shelby.

Ohio—Edward H. Scanlon, Editor TREES Magazine, Cleveland.

Oklahoma—O. A. Zeigler, Supt., Board of Park Commissioners, Tulsa.

Pennsylvania—J. C. Kenealy, Tree Warden, Ardmore.

South Carolina—G. W. Landis, The Davey Tree Expert Co., Ninety Six.

Utah—Rufus D. Johnson, City Tree Warden, Shade Tree Commission, Salt Lake City.

Virginia—H. M. Van Wormer, President, Van Wormer Tree Service Co., Richmond.

Norfolk Counts Trees

(Continued from Page 20)

removed from this place last year because it was killed by a gas leak, we can check to be sure the leak has been repaired before replacing the tree.

We expect this survey to be very useful in planning pruning and spraying programs. It will also give us some very definite figures on how well our replacement program is keeping pace with losses.

Most inventories end up with a total value. This one does not. There has been so much said pro and con about tree values that we don't want to hazard a guess at the total value of our trees. What we think they are worth would be unbelievable, and what some people who have neon signs hidden by trees think they are worth would be unprintable. We will say that if we had no trees and started out to plant 47,507 or even a fraction of the size of our existing trees we would need over a million dollars with which to do it.

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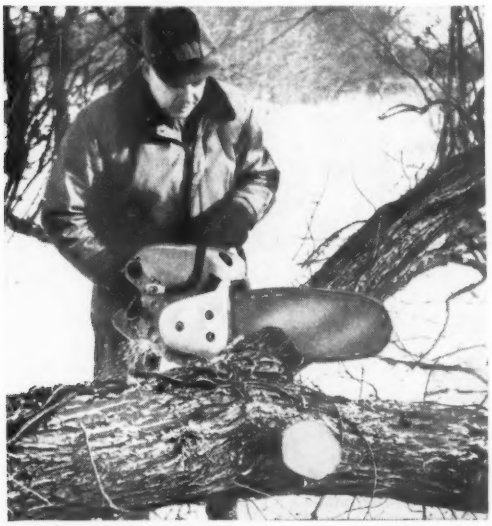

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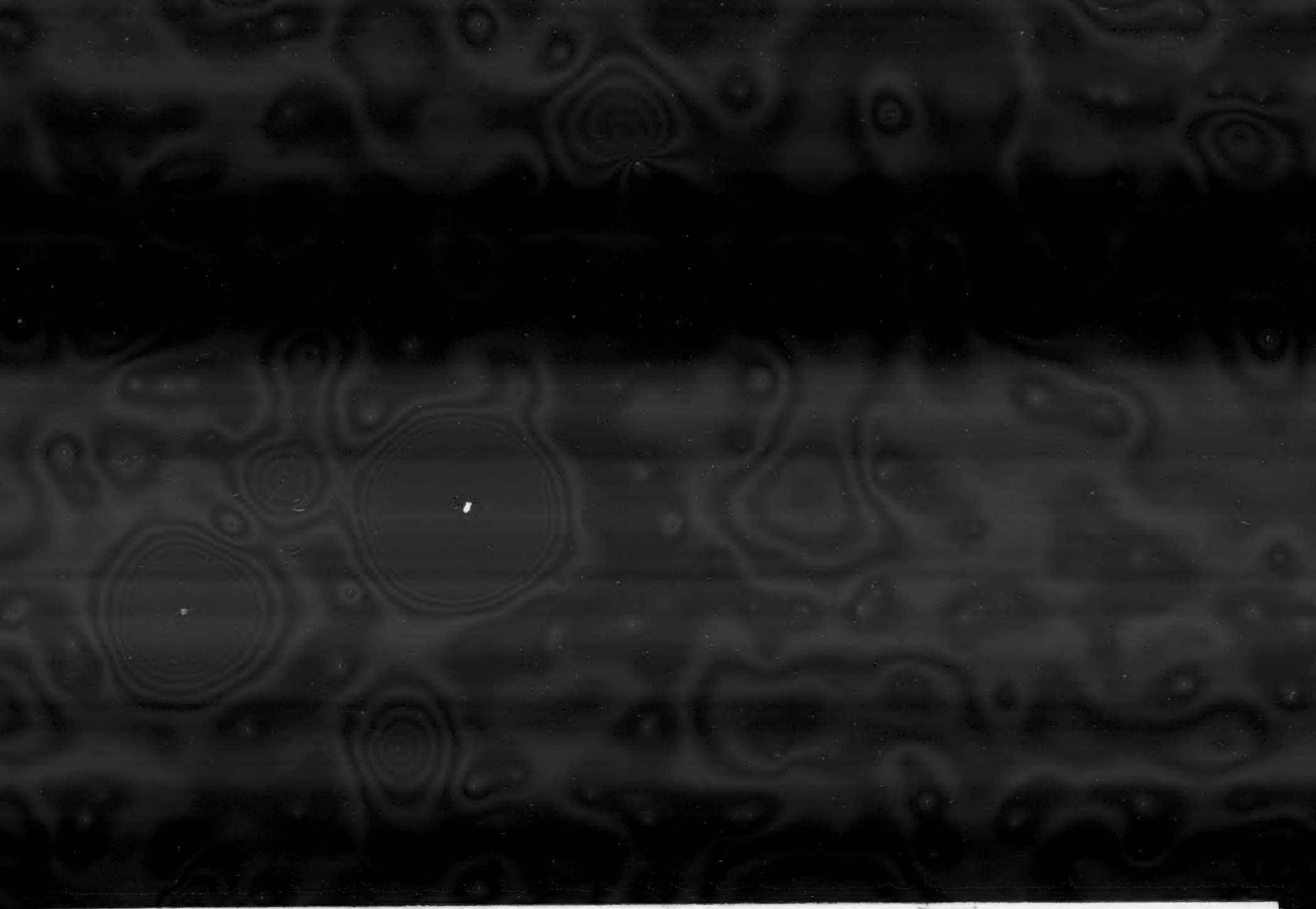
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